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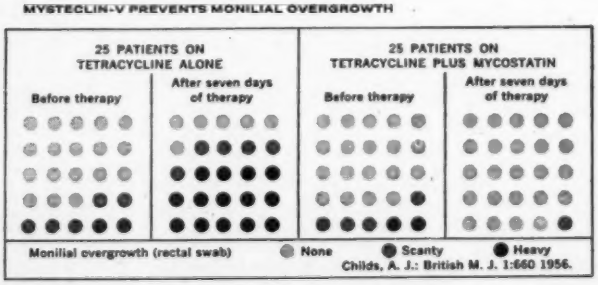

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Original Articles

VASCULAR CHANGES IN THE OCULAR FUNDUS

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Introduction:

THE retina of the human eye may be compared to a chart on which the observer is able to visualize the normal signs of health, or the alterations produced by disease. Magnified and illuminated with the ophthalmoscope, these changes may be studied in detail, and when properly interpreted are useful as records of past events, and indicators of future trends. Moreover, by observing not only the static picture but also the dynamic changes as a disease progresses, one may obtain valuable clues as to the efficacy of therapy, and the ultimate prognosis.

The purpose of this paper is to review the more common vascular changes seen in the retina and the current clinical interpretations of these alterations. It is especially important that no confusion exist if there is to be a mutual understanding of the retinopathies as seen by the ophthalmologist and the internist or general practitioner.

Only brief mention will be made of the pathogenesis involved, as this is to be mainly a description and interpretation of the changes seen with the ophthalmoscope. The alterations described will be those seen in arteriolar sclerosis, hypertension, diabetes mellitus, occlusion of retinal arteries and occlusion of retinal veins. The discussion will be followed by a brief resume' of cases illustrated by fundus photographs.

*Presented at the Gold Headed Cane Club, Phoenix, Arizona, March 14, 1957

The photographs are of patients seen in the course of a routine examination, or in consultation, and were taken with the Bausch and Lomb Retinal Camera. Although the original Kodachrome transparancies must be studied to appreciate the picture fully, the black and white reproductions show much of importance. Photographs such as these are helpful in observing the changes in the retina from one examination to the next, and have recently assumed increasing importance in forensic medicine.(1)

ARTERIOLAR SCLEROSIS

Beyond the first or second bifurcation, the retinal arteries become arterioles. Therefore, most of the arterial tree visible in the retina is arteriolar in nature, and the use of the term "arteriosclerosis" as applied to the retina, should be replaced by arteriolar sclerosis. Arteriosclerosis of the central retinal artery is present as a normal aging process, but most of these changes are not seen since the main portion of the artery is not visible ophthalmoscopically. Arteriosclerosis of the central artery may be inferred when occlusion of this artery occurs. Keeping in mind that when looking at the retinal vessels we normally see only the blood column, the following signs are indicative of retinal arteriolar sclerosis.

The earliest sign is a slight yellowing and widening of the reflected light streak along the middle of the arterioles. This is caused by a slight coloration and increased opacity of their walls.

Later, yellowish stripes may be seen on either side of the blood column. As the central light reflex becomes wider and the visible blood column becomes more yellow in color, it appears similar to a copper wire (copper wire arteriole), and when the wall of the vessel becomes even more opaque it takes on the appearance of a silver wire (silver wire arteriole). Bright refractile cholesterol crystals may at times be seen on the vessel wall. Occasionally the opacity of the vessel occurs in small interrupted segments looking like white spots on the arterial wall. Fuchs(2) feels this is due to exudate lying on the vessel.

Another sign is irregularity in the caliber and narrowing of the blood column, probably due to irregular thickening of the vessel wall, or sclerotic plaques lining the vessel. Spasm of the vessel may simulate this change, but the narrowing will come and go with spasm, but is always present at the same place when due to sclerotic changes. Serial fundus pictures will differentiate these conditions.

An important sign is present at the point of crossing of the arteriole and the vein. Normally the venous blood column is visible through the transparent arteriolar wall and can be followed up to the very edge of the arteriolar blood column. When the walls of the arteriole become less transparent they obliterate a small portion of the venous blood, and the vein seems to stop short of the arteriole and begin again a short distance on the other side (Gunn's phenomenon). Also, since the artery and the vein share the same adventitial coat at the crossing, a thickening of one or both of the walls will result in an actual compression of the vein at this point. This compression phenomenon or "nicking" may occur with hypertension alone, or as a physiologic variation(3), so it must be analyzed as part of the whole retinal picture. Also, when due to hypertension alone the venous blood column is compressed, but often shows a tapered narrowing which is visible all the way to the arteriolar blood column, rather than being hidden by the sclerotic arteriolar wall.

Tortuosity of sclerotic vessels is a debatable sign. It is thought by some authors(4) that congenital tortuosity cannot be differentiated from that due to thickening of the vessel walls. More generally it is felt that tortuosity or corkscrew appearance of the smaller arterioles indicates arteriolar sclerosis. It may be due to increased thickness with secondary increased length of the vessels whose ends are fixed.

The veins may show dilation beyond crossings and irregular narrowing or perivascular streaks. Hemorrhages are ordinarily not considered part of the picture of sclerosis, but are present in advanced cases. With advanced, prolonged arteriolar sclerosis, optic atrophy may occur.

HYPERTENSION

It is important to recognize the manifestations of hypertensive retinopathy and arteriolar sclerotic retinopathy, and recognize the characteristics peculiar to each as well as those common to each. They must be evaluated separately in interpreting the retinal picture in relation to prognosis.(5)

Irregular narrowing, small white lipoid deposits, hemorrhages and exudates may be entirely arteriolosclerotic. They are not reversible. The focal arteriolar spasms, diffuse white "cotton wool" spots, and edema of the optic nerve are purely hypertensive findings and are reversible in fundi with very little organic vascular changes.

Confusion can be avoided by considering hypertension of three main types. In the first type the arterioles of the retina show only progressive changes of sclerosis, as discussed above. The second type includes hypertensive disease in which there is an acute factor characterized by a sudden narrowing or spasm of the arterioles of the retina. The third group represents a combination of the other two.

The first group of hypertensive disease includes mainly the benign essential hypertension. The changes here are characteristically those of arteriolar sclerosis as summarized above, and the presence of hypertension can only be suspected if the arteriolar sclerosis is more advanced than would be expected on the basis of the patient's age and general health.

The second group may be associated with numerous diseases such as diffuse glomerulonephritis, hypertensive disease of pregnancy, acute phases of essential hypertension, less common renal diseases, pheochromocytoma, and other endocrine diseases. The retinal picture in such cases does not show the slowly progressive sclerotic changes mentioned above. Here we see acute focal or general narrowing of the retinal arterioles, the so-called "arteriospastic retinopathy".(6) The light reflex along the arterioles may be narrower than normal, bright, and very

sharply outlined, rather than slightly granular or diffuse and wide as seen in a sclerotic arteriole.

Compression of the vein at the crosisng may occur in hypertension even before signs of arteriolar sclerosis appear. When due to arteriospastic hypertension without sclerosis the vein is simply compressed, or deflected, but when sclerosis is present part of the vein is rendered invisible by the sclerotic artery. When a hypertensive arteriole crosses a vein, the angle of crossing is often increased due to the same hydrodynamic principle which rotates a flowing garden hose around to right angles as an automobile wheel runs over it.

After these arteriospastic changes have existed for some time, of course, the inevitable sclerotic processes begin to superimpose their picture on that already present. Thus, we often see signs of both in the same fundus, and this comprises the third group.

In addition to the vascular changes, alterations in the retina itself include generalized retinal edema, and hemorrhages. The "flame shape" or "paint brush" configuration they assume is due to the arcuate pattern of the nerve fibers in the superficial layer. "Cotton wool" spots occur with further vascular damage. They are scattered fluffy white areas, and represent ischemic infarcts of the retina or transudates from the anoxic small vessels. Later these transudates may absorb or undergo degeneration and hyalinization, and remain as small yellowish clearly outlined spots (edema residues). When occurring around the macula, they form a characteristic "star" pattern due to the anatomical arrangement of the fibers in the layer in which they occur.

These latter changes increase with the severity of the hypertensive vascular disease, and offer a more serious prognosis. The edema may become more diffuse and involve the optic disc. This papilledema is a very serious prognostic sign, and though it may be due to edema of the nerve itself, it more often indicates increased intracranial pressure, with cerebral edema.

In an attempt to grade the severity of the retinal changes, numerous classifications have been suggested. The one proposed by Keith and Wagener(7) has been closely followed in this country. Another system of grading the hypertensive and arteriolar sclerotic changes separately has been proposed by Scheie.(8) However, no classification can be universally acceptable, since there are so many combinations of sclerosis, benign essential hypertension, and arteriospastic hypertension. We seldom see pure cases of any one. Rather certain aspects predominate in a given case, and for this reason a descriptive diagnosis is probably more satisfactory.

DIABETES MELLITUS

Diabetic retinopathy is characteristically a disease of older patients who have had prolonged diabetes, although it does occur in juvenile diabetics as well.(9) The duration of the diabetes seems to be the most important factor.(10)

The most important and often the earliest sign of diabetic retinopathy is the appearance of small, round microaneurisms. These are seen ophthalmoscopically as small red "dots", and for many years were thought to be small hemorrhages. Ballantyne and Loewenstein(11) emphasized their true structure, and Friedenwald(12) showed that they were saccular aneurisms arising from capillaries. These microaneurisms are the most important single sign in making the diagnosis of diabetes.

In addition to the microaneurisms, larger red "blot" hemorrhages are present, occurring as a result of the rupture of, or diapedesis through an aneurism.(13) These hemorrhages become larger with progression of the vascular disease. In the later stages, large pre-retinal hemorrhages may occur.

The vascular changes in diabetes are primarily venous,(14) in contrast to the arteriolar changes in hypertension. Engorgement of the veins may occasionally be the earliest sign, occurring even before the microaneurisms.(15) The veins become generally dilated, or more often show alternate focal constrictions and varicose dilatations associated with marked tortuosity or loop formation. New vessels may form or a vein may appear to be reduplicated. Dramatic sheathing of the veins is often present.

By contrast to the venous changes, the arterioles are relatively normal except for changes due to arteriolar sclerosis or hypertension which often occur in addition to the diabetes.

The remaining characteristic retinal changes are the typically small white "exudates" which are sharply demarcated and have a bright luster. They are located deeply beneath the larger vessels and assume a variety of configurations. They are easily differentiated from the "soft" white "cotton wool" patches and edema of the hyper-

tensive. The "exudates," microaneurisms, and small hemorrhages are usually found in the central area of the retina.

In the late stages, large vitreous hemorrhages may be followed by proliferation of glial tissue and new capillaries in the vitreous. The new capillaries rupture with extension of the process, and a vicious cycle is set up. Such an advanced picture offers an almost hopeless prognosis for the eye.

ARTERIAL OCCLUSION

The flow of blood through the central retinal artery or one of its branches may be diminished, or obstructed completely by thrombosis, or less commonly by spasm, embolus, or trauma. Thrombosis may be secondary to arteriosclerosis of the central artery, or a result of vasculitis. It has been shown that the great majority of occlusions are associated with arteriosclerosis, and hypertension.(16) Thus, although the arteriosclerosis of the central artery cannot usually be seen ophthalmoscopically, its existence may often be assumed in the event of arterial occlusion. Such an occlusion may be the first sign of a generalized vascular disease. Whatever the cause, the sequence of changes in the retina is the same. With occlusion of the central artery, all of the larger arteries are narrowed, and the blood column may appear to be broken up into segments. These segments may oscillate with the pulse wave or move slowly along the vessels. The arterial blood appears darker in color than normal, the veins are narrower than normal and no venous pulse is present. An arterial pulse cannot be elicited by digital pressure on the globe. The vessels may gradually widen as blood flow is re-established, but permanent damage from anoxia may have already occurred.

The retina itself becomes greyish white and opaque due to generalized retinal edema, particularly marked in the perimacular area. The macula on the other hand remains free of edema because of its histologic structure, and it remains its normal reddish color. This color is accentuated in contrast to the milky white surrounding retina and is described as the "cherry red spot." A few scattered small hemorrhages may be present.

In time, the edema subsides, and the retina may appear relatively normal. However, the vessels remain narrow, some diminished to white lines, and the disc remains pale with clear margins.

Occasionally the macula or nearby area may be supplied by an artery which is a branch of the ciliary artery rather than the central retinal artery. In such a case, this cilio-retinal arteriole will continue to function even with complete central artery occlusion. The area of the retina supplied by this vessel will remain normal.

In the event only one of the branches of the central artery is obstructed, only the area of the retina supplied will show the changes described above.

VENOUS OCCLUSION

The central retinal vein or its branches may be occluded by endothelial proliferation and thrombosis, secondary to external compression from a thickened, sclerotic, central artery. Other causes include thrombosis as a result of reduced pressure or slowing of the venous circulation caused by arterial spasm, sudden arterial hypertension, blood dyscrasias and others. Primary degenerative or inflammatory venous disease may also result in occlusion. It is thought that most cases represent varying combinations of more than one of these causes.(17)

Following complete central vein occlusion, the disc margins are practically obscured by edema which extends out over the retina. The most marked change is seen in the veins which are dilated, dark in color, and extremely tortuous. The arteries are narrowed. Superficial "flame" shaped hemorrhages are everywhere, and some deeper hemorrhages are present. White areas of transudates are scattered about.

Incomplete central vein occlusion results in similar but less intense changes. When a branch occlusion occurs, the same changes are seen, but are limited to the sector drained by the venous branch with the remainder of the retina normal in appearance.

In time the thrombus may canalize, or new vessels form, and the hemorrhages and transudates will gradually disappear. The areas of neovascularity will show numerous tortuous vessels in the retina.

CASE ILLUSTRATIONS

Figure 1: Right fundus, Mrs. G. H., 59 yr. old WF with history of chronic hypertension 10 years. B.P. 220/100.

Changes in fundus:

1. Increased light reflex.
2. Narrowed arterioles.
3. "Silver wire" superior nasal to disc.
4. Peri-arteriolar sheathing.

5. Small vessel tortuosity.
6. New vessel formation above from venous branch occlusion.
7. A/V compression with partial obliteration of venous blood column.
8. Small retinal hemorrhages.
9. "Exudates."

Ocular Diagnosis: Severe generalized arteriolar sclerosis with retinopathy.

Interpretation: Long standing chronic hypertensive disease resulting in marked arteriolar sclerosis.

Figure 1.—Arteriolar sclerosis.

Figure 2: Right fundus, Mrs. B. H., 28 yr. old WF with history of toxemia of pregnancy 7 years previously followed by mild hypertension. Recent blurring of vision, B.P. 230/120 at time of photograph.

Changes in fundus:

1. Slight focal and generalized narrowing of arterioles without sclerosis.
2. "Flame" shaped hemorrhage.
3. "Cotton wool" spots.

Ocular Diagnosis: Retinopathy of acute hypertension.

Interpretation: Recent or acute severe angiospastic hypertension. In view of history, secondary to previous toxemia of pregnancy.

Figure 2.—Hypertensive retinopathy.

Figure 3: Right Fundus, Mr. A. B., 60 yr. old WM with blurred vision 3 months. Known diabetic 2 months, but had not been examined for many years.

Changes in fundus:

1. A few small scattered microaneurisms.
2. Focal constriction and varicose dilatation of veins.
3. Sheathing of veins.
4. Small, white, sharply outlined "exudates."

Ocular Diagnosis: Diabetic retinopathy, severe.

Interpretation: Diabetes Mellitus of long standing.

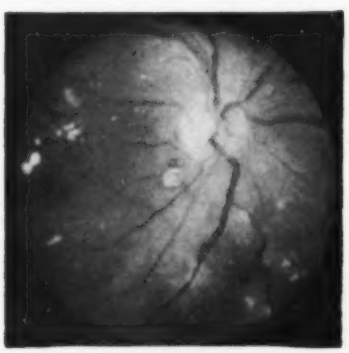

Figure 3.—Diabetic retinopathy.

Figure 4: Left fundus, Mr. A. B., same patient as figure 3, complaining of sudden further loss of vision.

Changes in fundus:

1. Two large superficial retinal hemorrhages.
2. Other changes listed in figure 3 above.

Ocular Diagnosis: Diabetic retinopathy, severe, prognosis for vision, poor.

Interpretations: Diabetes Mellitus of long standing.

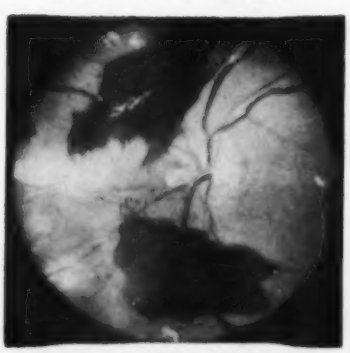

Figure 4.—Diabetic retinopathy.

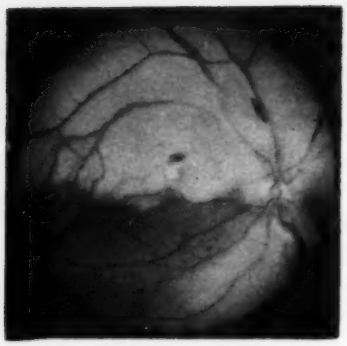

Figure 5.—Central artery occlusion.

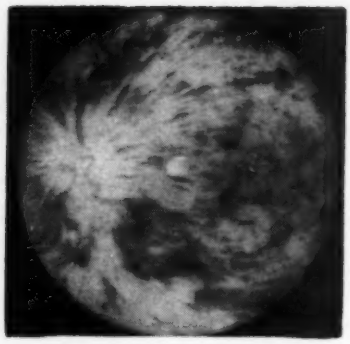

Figure 6.—Central vein occlusion.

Figure 5: Right eye, Mr. J. C. (Patient seen through the courtesy of Dr. Virgil Toland, and Dr. Paul McFarland), 37 yr. old WM, with history of blurred vision four days, following minor injury to eye (simple foreign body struck eye). General health good.

Changes in fundus:

1. Narrowed arterioles.
2. Some venous narrowing.
3. Greyish-white retinal edema everywhere except for area supplied by cilio-retinal arteriole.
4. One superficial hemorrhage.

Ocular Diagnosis: Acute occlusion of central artery of retina. Small portion supplied by cilio-retinal arteriole not involved.

Interpretation: Usually indicative of systemic arteriosclerosis with or without hypertension. In this case, history suggests acute spasm of central artery due to trauma.

Figure 6: Left fundus, Mr. G. M., 71 yr. old WM with history of blurred vision in left eye for 6 weeks. General health good.

Changes in fundus:

1. Blurred disc margins.
2. Dilated tortuous veins.
3. Narrowed arterioles.
4. Superficial "flame" hemorrhages, and deep hemorrhages.
5. Generalized retinal edema.

Ocular Diagnosis: Acute obstruction of central retinal vein.

Interpretation: Probably secondary to changes resulting from arteriosclerosis of central artery. Hypertension should also be suspected.

Summary:

Retinal changes in arteriolar sclerosis, hypertension, diabetes, and vascular occlusions have been described and illustrated with fundus photographs. It is hoped that this review will prove helpful to those in all branches of medicine who must interpret changes seen with the ophthalmoscope.

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THE CURRENT STATUS OF CHEMOTHERAPY

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IT IS disturbing to report that the status of chemotherapy at present is significantly poorer than that of 5 to 10 years ago. Our own therapeutic enthusiasm, abetted by the importunings of our patients and the sometimes misleading advertisements of a few pharmaceutical companies, has led us down a sort of primrose path. We have sowed the wild oats of promiscuous chemotherapy; now we must reap the crop of antibiotic-resistant bacteria and drug-sensitized patients.

The most urgent problem in the field of infectious diseases today is the control of staphyococcal infections, principally of hospital origin. In the early penicillin era approximately 85 per cent of staphylococcal strains were amenable to therapy with this then new drug. At the present time only about 15 per cent of strains are similarly treatable, and secondary staphylococcal infection in hospitalized patients has become a major scourge. In a survey of 1,172 patients at Boston City Hospital, Finland and Jones (1) found 181 (16 per cent) to be suffering from staphylococcal infections. Of these, 62 per cent had apparently been acquired in the hospital from other patients and personnel. This "hospital" staphylococcus is characterized by a high degree of resistance to most commonly used antibiotics and frequently produces serious or fatal infections, especially in postoperative or debilitated patients. Other common pathogenic micro-organisms have similarly became resistant to drugs previously used successfully, although to a lesser extent. Thus, the coliforms, enterococci and other gram-negative rods have in many instances become resistant to streptomycin and the tetracyclines (2-4).

Antiobiotic resistance is of two varieties: inherent and acquired. Certain organisms are not affected by therapeutically achievable concentrations of certain antibiotics, i.e., *E. coli* is not significantly sensitive to penicillin. The "hospital" staphylococcus is such an inherently penicillin-resistant organism, in that it produces penicillinase. Such organisms rush to fill the vacuum created by the suppression of antibiotic-sensitive strains in the flora of patients receiving chemotherapy, and then spread to hospital personnel and thence to other patients. A lesser problem is posed by organisms which acquire resistance to chemotherapy in the course of treatment of an individual infection. Such organisms, however, may be transmitted to other patients and produce disease. Acquired resistance arises from genetic mutants which constantly appear in a bacterial population. If such resistant mutants appear in a patient receiving chemotherapy, their propagation is favored over that of their susceptible progenitors. Resistance to streptomycin and erthyromycin is acquired with great rapidity; that to penicillin, chloramphenicol, and the tetracyclines is developed in a slow step-wise fashion.

While pathogenic bacteria have changed to adapt themselves to an antibiotic environment, so also have hosts changed in their response to chemotherapy. An increasing number of persons are becoming sensitized to chemotherapeutic agents and react unfavorably to their administration. While fatal reactions to penicillin are still infrequent, they are sufficiently common to give pause to ill-considered treatment with this drug. Less severe reactions to all antibiotics are an unhappy commonplace (5).

Thus, we find ourselves in a dilemma of our own manufacture, and must find an adequate solution or lose many of the tremendous benefits of chemotherapy. Three possible solutions to the problem are apparent.

Restriction of the use of all antibiotic agents to the treatment of infections where they may reasonably be expected to alter favorably the course of the disease is essential to decelerate the appearance of further antibiotic-resistant strains of micro-organisms. The partial reappearance of antibiotic-sensitive strains may follow (6). The wide-spread use of chemotherapeutic drugs in the treatment of many insusceptible viral infections, especially those of the upper respiratory tract, is to be condemned. The prophylactic use of antibiotics to prevent "secon-

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dary" bacterial infection is generally useless, except in occasional instances of unusual host susceptibility or debility. Chemoprophylaxis in general must be limited to such definite situations as the prevention of streptococcal infections in rheumatic subjects. Too often, ill-advised chemoprophylaxis not only does not prevent bacterial infection but also does ensure that the infection will be due to antibiotic-resistant bacteria. This certainly is the case, for instance, in the "prevention" of infection in patients who have an indwelling urethral catheter. Each chemotherapeutic drug has a definite and delimited antimicrobial spectrum, beyond which it cannot be active. The use of an antibiotic should be restricted to the treatment of infection produced by a micro-organism, isolated by culture or presumed to be the pathogen on reasonable clinical grounds, which lies within its spectrum of activity. With knowledge of the etiology of an infection and the antimicrobial spectra of each drug, treatment may usually be empirical. Tests for sensitivity of bacteria to antibiotics in general need be performed only when the bacteria is known to vary widely in antibiotic sensitivity or where failure of response to treatment or chronicity and relapse become apparent. Under certain circumstances the ability of an antibiotic to act in bactericidal rather than in a bacteriostatic manner must be determined, i.e., subacute bacterial endocarditis. Unfortunately, the commonly used disc or tablet methods of determining drug activity do not give this information, which can be obtained only by resorting to the tube-dilution method.

A practical, although desperate, measure to control serious staphylococcal infections in the hospital may be the restriction of one or more of the drugs usually active against staphylococci solely to serious infections with that organism. At the University of California Hospitals novobiocin has proved invaluable in the treatment of a few patients infected with the "hospital" staphylococcus. It is noteworthy that chloramphenicol, which fell into disuse for several years because of fear of hematopoietic depression, remains active against many strains of staphylococci, while the tetracycline group of drugs, which remained in wide general use, are now active against only occasional strains of staphylococci.

A second potential solution to the dilemma is the development of new antimicrobial drugs. Unfortunately, the antibiotics developed in recent years have represented only modest additions to our therapeutic armamentarium. Whether another "penicillin" will appear must remain problematical. At least for the time being, we will have to make do with what we have.

A third solution to the problem lies in the judicious use of synergistic combinations of drugs. The term synergism must be strictly defined, since it has come into wide misuse recently in certain pharmaceutical advertisements (7, 8). Synergism of two or more antimicrobial drugs consists in a total activity of the combination in excess of the simple additive sum of their separate activities in respect to rapidity and completeness of their antibacterial effect. Synergism applies only to a certain combination of drugs against a certain organism or strain of an organism. Thus, it is a highly specific phenomenon in regard to both micro-organism and antibiotics. No drugs can be claimed to be generally synergistic. The situation where the simultaneous use of two drugs delays the emergence of resistant strains to either drug is an entirely different matter, and has been documented clinically only in the case of combinations of streptomycin, para-aminosalicylic acid, and isoniazid in the treatment of tuberculosis and the simultaneous use of erythromycin and some other active antistaphylococcal drug in the treatment of staphylococcal infections. Jawetz and Gunnison (9) have defined in a useful fashion the situations where antibacterial synergism is likely to be observed, although, with one partial exception, such synergistic activity can be predicted only on the basis of carefully designed laboratory tests. The schema of Jawetz and Gunnison may be used as a practical guide in determining the sensitivity of bacteria to combinations of two drugs. Combinations of more than two drugs introduce further great complexity, and tests are performed with great difficulty even in a research laboratory.

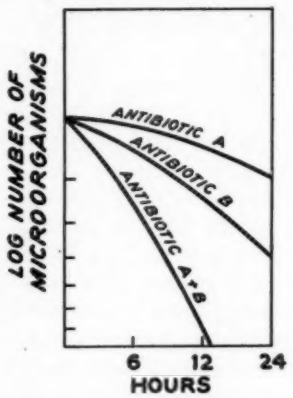
In many instances the empirical combination of penicillin and streptomycin has been found to act synergistically in infections due to streptococcus fecalis, notably in endocarditis due to this organism. Beyond this, no simple rule of thumb can be used to replace adequate laboratory control. However, combinations as predicted by laboratory tests have often proved lifesaving, particularly in serious staphylococcal infections.

TABLE 1
SCHEMA OF ANTIBACTERIAL ACTIVITY OF ANTIBIOTIC COMBINATIONS
(adapted from Jawetz and Gunnison)

Group I Drugs – Bactericidal
Penicillin
Streptomycin
Neomycin
Bacitracin
Polymyxin

Group II Drugs – Bacteriostatic
Tetracyclines
Chloramphenicol
Erythromycin
Sulfonamides

I plus I—additive or synergistic
II plus II—additive or indifferent
I plus II—may be synergistic if organism is relative insensitive to I
I plus II—may be antagonistic if organism is relatively sensitive to I. (Antagonism is probably rarely of clinical significance)



SCHEMATIC DIAGRAM ILLUSTRATING ANTIMICROBIAL SYNERGISM OF ANTIBIOTICS A AND B IN VITRO

SUMMARY AND CONCLUSIONS

The effectiveness of antimicrobial therapy has been seriously impaired, primarily by the appearance of resistant strains of micro-organisms, secondarily by the development of drug-sensitivity by an appreciable number of persons.

Three possible solutions to this problem are: restriction of unnecessary chemotherapy; the development of new antibiotics; and the judicious use of specific synergistic antibiotic combinations.

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THE HOSPITAL AS A SOURCE OF ANTIBIOTIC-RESISTANT STAPHYLOCOCCI

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I THINK it would be true to say that during the last four or five years a large and growing impression has gained ground among the medical profession in the United States that they are dealing with an ever-increasing amount of discases caused by staphylococci, and that furthermore these staphylococci are not only becoming more virulent but they are also steadily becoming more and more resistant to antibiotic therapy. This impression has been fostered by the practitioner finding, every now and again, that he has a case of staphylococcal disease which is recalcitrant to his therapy; an injection or two of penicillin, which never seemed to fail a few years ago, no longer does the trick every time. And, in apparent support of this finding from time to time he reads an article in one of the medical journals which seems to bear out his finding as being the impression of the profession in general.

This idea has frequently resulted in resort to either the use of ever-increasing doses of antibiotics, or to combinations of penicillin and the so-called "broad spectrum" antibiotics such as aureomycin and terramycin, or to a combined assault on the organism by antibiotics and sulfonamides, on bacteriological grounds of the most doubtful validity, or in the frankly specious hope that, somehow, such potent forces must surely win the day.

The practitioner draws, perhaps, on his recollections of battles with the gonococcus in the years immediately preceding World War II. He may recall how, when the sulfonamides made their appearance in the late 1930's they seemed to be the answer to so many therapeutic problems, and especially so in the case of gonorrhea. Almost overnight, it seemed, gonorrhea which had been such a discouraging professional challenge, was eliminated as a serious adversary. He boasted, and rightly, at that time that a case of gonorrhea was child's play in comparison with a bad case of the common cold. In almost no time at all the public was openly hailing the sulfonamides as "miracle drugs" and they were dispensed with something approaching reckless abandon. And then, he remembers, little by little there came a change in the tide of battle. Every now and again an event which supervened with increasing frequency, he came across a case of gonorrhea which did not quite behave according to Hoyle. The accustomed handful of sulfa tablets failed to vanquish the gonococcus. He prescribed larger doses of sulfonamides, or he prescribed sulfathiazole instead, but again the patient returned, crestfallen. Gradually the position became clear, the gonococcus had undergone a change. Sulfa-susceptible strains of gonococci had been eliminated, and their place was gradually being taken over by strains against which the sulfonamides seemed powerless. The gonococcus had developed resistance. Happily this state of affairs was resolved, apparently permanently by penicillin, to which the gonococcus failed to develop effective resistance. However, the staphylococcus appears to be a different proposition. Can it be, the practitioner may well ask himself, that his experiences with the gonococcus in respect of sulfa-therapy are being repeated in the case of the staphylococcus, in respect of the antibiotics?

It seems to be clear, at least, that the present situation as regards the staphylococcus is unsatisfactory. In that case it would seem only sensible to appraise the position as fully as possible. It behooves us to enquire:

1. Is the medical profession at this time actually contending with more staphylococcal disease than was previously the case?

2. Is there evidence that the staphylococcus is increasing significantly in virulence, and is it becoming progressively more resistant to antibiotics?

3. In the event the answer to either of these questions is in the affirmative, is this a phenomenon which is encountered widely in the general population, or is it essentially restricted to patients in the larger hospitals?

4. In the event that the hospitals are found to be the principal source of staphylococci of increased pathogenicity and antibiotic-resistance, how has this situation come about?

5. And lastly, since it would be profitless to treat such an issue as a purely academic exercise, assuming that our fears are well-founded, what corrective measures can the medical profession take?

Let us consider the question of whether or not disease caused by the staphylococcus actually seems to be increasing in amount. A review of the literature seems to point to a large measure of agreement that it is not. Walsh McDermott (1) states there is no indication that our population at large or the special population in our hospitals is experiencing any greater exposure to staphylococci now than was the case twelve years ago. As he points out, staphylococci were plentiful then and are plentiful now. The findings of A. A. Miles (2) and his associates, published in 1944, appear to bear out McDermott's contentions.

Can it be, then, that in the United States the medical profession is now dealing in general with strains of staphylococci which show evidence of increased pathogenicity for man as compared with, say, ten or twenty years ago? Once again the answer would appear to be no. McDermott (1) points out that if such an increased prevalence of more pathogenic staphylocci were actually occurring it would be most readily apparent in the number and the clinical forms of staphylococcal disease seen in patients on admission to the hospital, but he draws attention to the fact that primary hematogenous osteomyelitis of childhood and adolescence, which was previously one of the commonest forms of serious staphylococcal disease, has practically disappeared from our hospital admitting rooms. Fisher (3) et al. reported that in the twenty-year period ending in 1953 they admitted slightly over one hundred patients at the Johns Hopkins Medical Center on account of staphylococcal bacteremia, which gives an annual admission rate of about five to ten for this condition, figures which are consistent with those seen at the New York Hospital – Cornell Medical Center, New York, New York (1).

No one seems to be mentioning either any significant increase in the number of patients with staphylococcal disease or any increase in unusually malignant forms of staphylococcal disease among the patients being admitted to the hospitals, so it seems justifiable to conclude that as far as the general population outside of hospitals is concerned they are not being exposed to significantly more danger of staphylococcal disease than was the case a few years ago.

The initiation of any disease involving microorganisms requires some degree of breakdown in the defense mechanisms of the host. This appears to be especially true of the staphylococcus. An ubiquitous organism, it is constantly present in man's environment, being found in the air he breathes, on the food he eats, and on the commonplace articles of his daily use. Small wonder, then, that it is constantly found on his skin, and as a permanent inhabitant of his nasopharynx and pharynx. The surprising thing is that despite his harboring of these organisms on so generous a scale as a general rule they occasion him very little disability. Staphylococcal disease, taking all the factors into consideration, is relatively rare. Man has learned to live at peace with the staphylococcus, for the most part, during his entire life.

However, at times and under certain circumstances the staphylococcus ceases to play the part of a harmless parasite, and invades the body tissues to produce lesions which run the gamut of acute inflammatory pathology from folliculitis to boils, carbuncles, cellulitis, septic pneumonia, on to septicemia and death. It seems reasonable to deduce that at such times either the host or the staphylococcus – or both – must first undergo some critical change.

When we turn to the question of whether or not the staphylococci in our hospitals are showing increased virulence and pathogenicity for man we seem to be on less certain ground. Possibly opinions that differ on this score do so because of the different points of view from which the problem is approached. McDermott (1) sets as his yardstick of increased virulence epidemics of unusually serious staphylococcal disease involving a dozen or more patients at a time in a single hospital and occurring throughout our hospitals in general. Measuring by these standards he denies that we have evidence of increased virulence of what he refers to as the "so-called hospital staphylococci" and goes on to say that our hospital patients are not being subjected to a greater risk of staphylococci, or to any more especially virulent strains of staphylococci than they ever were.

This may appear inconsistent when he goes on to say, "This does not mean that we are not

seeing the development of more staphylococcal disease among our patients while they reside in our hospitals today than was the case a decade or so ago . . . most of us are convinced that we are seeing with greater frequency the actual development of staphylococcal disease in patients *after* they have come into our hospitals." And yet again he says, with reference to the hospital patient, "We are obviously doing other things to our patients that we were not doing in years gone by," from which he deduces that it is the setting rather than any absolute increase in microbial virulence that is responsible for staphylococcal disease acquired in the hospital. Current literature shows considerable agreement with this later contention, but it seems difficult at the same time to reconcile this with his assertion that our hospital patients are not being subjected to greater risk of exposure to staphylococci.

His point is, of course, that our hospital patients are not so much being exposed to greater risk of staphylococcal disease as that they are now being rendered less well-equipped to face the same old risk as in years gone by. We will later examine this aspect of the problem at greater length. In the meantime let us consider the question of resistance of staphylococci to antibiotics. In general current literature indicates that whereas a few years ago antibiotic-resistant strains of staphylococci were rare, we are now finding them a most formidible problem in our hospitals, and especially the larger ones. Spink (4) has stated that "There appears to be no question that as antibiotics have been introduced for general use, antibiotic-resistant strains of staphylococci have appeared in those areas where each of the antibiotics has been used most extensively. This applies especially to large general hospitals." And, referring to changes in the susceptibility of staphylococci to antibiotics he shows that whereas prior to the introduction of penicillin into the University of Minnesota Hospitals in 1942 not a single culture of sixty-seven strains of pathogenic staphylococci isolated from patients was found to be resistant to more than 0.8 unit of penicillin, by 1950, fifty per cent of the strains of coagulase-positive staphylococci isolated from patients in the same hospitals were highly resistant to both penicillin and streptomycin. The upward trend of staphylococcal resistance to antibiotics has continued at these institutions. Data covering the years 1953, 1954, and 1955 are disquieting in their demonstration that seventy per cent of the strains were resistant to more than fifty units of penicillin per ml, and to well over fifty micrograms per ml of both streptomycin and the tetracycline drugs. On the other hand we may derive some comfort from his experience with erythromycin, to which staphylococcal resistance is not only less, only twenty per cent of strains being resistant to more than fifty micrograms per ml, but in addition the percentage of resistant strains remained essentially unchanged over the three-year period.

Another salutary finding by Spink (4), and one which may well point to a therapeutic moral which we will discuss later, is that from 1953 to 1955 only a very small number of strains of pathogenic staphylococci were strongly resistant to chloramphenicol, owing, he believes, to chloramphenicol's having been little used over that period because of a fear that it might be a factor in the causation of aplastic anemia.

Finland and Jones (5) have pointed out that during the last few years at the Boston City Hospital the staphylococci isolated from the majority of "closed" infections present at the time of admission to the hospital, that is, infections which had been acquired outside the hospital, in patients who had not been recently exposed to the hospital environment, were found to be susceptible to the majority of the antibiotics in current use. On the other hand, of the staphylococci isolated from infections acquired in the hospital, all were resistant to penicillin and the tetracyclines, many were resistant to streptomycin, and a few to erythromycin, while, once again, nearly all were susceptible to chloramphenicol.

Knight (6) and his associates who carried out a study at the Veterans Administration Hospital in Nashville, Tennessee, likewise found that new patients did not carry significant numbers of antibiotic-resistant staphylococci, whereas the staphylococci taken from patients during the course of hospitalization were resistant to a number of antibiotics. This resistance to antibiotics was most marked in strains of staphylococci from patients who had received tetracylines, somewhat less marked in strains from patients who had been given penicillin, – while the strains taken from patients who had received no antibiotic treatment were least antibiotic-resistant.

Collins and his co-workers carried out a study at Memorial Center, New York, as the result of which they have concluded that in both the hospital personnel and the long-term hospital patients they are contending with a serious carrier rate of strains of staphylococci which are not only antibiotic-resistant, but which also fall within a limited range of phage types which differ substantially from the staphylococcal strains in the external environment.

That the strains of staphylococci encountered in our hospitals are strongly pathogenic for man appears to be established beyond any reasonable doubt. In the course of a spot survey carried out at the Boston City Hospital in January, 1956, Finland and Jones (5) found that out of 181 cases of staphylococcal infection they considered that 113, or sixty-two per cent, were acquired after the admission of the patients to the hospital. Of these, sixteen were considered "serious," and the rest "less serious," but many of the "less serious" cases were characterized by severe and prolonged morbidity.

Spink's (4) findings in this respect at the University of Minnesota Hospitals are even more alarming. They have been meeting with a serious increase in the incidence of staphylococcal diseases, many of which were hospital-acquired. His statistics regarding staphylococcal septicemia are especially disquieting. He considers that prior to the introduction of penicillin the overall mortality from this condition was about seventy-five per cent. Penicillin cut down that death rate dramatically to twenty-eight per cent by 1945 and great hopes were reposed in it. But these hopes proved short-lived. Between 1951 and 1953 the mortality rate for the same condition had all but doubled, at fifty-four per cent, and from 1952 to the end of 1955 out of a total of forty-one cases of staphylococcal septicemia thirty-three of the patients died, giving a mortality rate of 80.48 per cent, which is to say that the likelihood of surviving staphylococcal septicemia if it is acquired after admission to a hospital, is rather poorer now than it was prior to the advent of antibiotic therapy.

The position, then, is that ten or twelve years ago practically all strains of staphylococci, wherever encountered, were susceptible to penicillin, but now the position is reversed, at least inside the hospitals, our larger institutions being reservoirs of staphylococci which are strongly resistant to penicillin and to all but the never and less-used antibiotics. Has this change in the staphylococcus been brought about by given strains of staphylococci gradually developing resistance to penicillin over the years as the result of progressive mutations in the course of penicillin therapy? McDermott (1), rejects this concept flatly; he states that a staphylococcus almost never becomes penicillin-resistant in vivo during therapy, and that because this fact has not been sufficiently appreciated by physicians they widely entertain the misconception that the numbers of cases of antibiotic-resistant staphylococcal disease seen each year in a general hospital are vastly greater than is the case. He also states that many physicians subscribe to a further misconception, which is that when a serious disease caused by a penicillin-susceptible staphylococcus is treated with penicillin that drug speedily become valueless in the case because the staphylococcus concerned becomes penicillin-resistant.

McDermott's veiews regarding the genesis of drug-resistance in the staphylococcus do not go altogether unchallenged. Blair (8) states that "there is little doubt that staphylococci can acquire resistance to certain antibiotics during antibiotic therapy," and he and Roundtree (9) and Thomson, and Wise (10), Crany, and Spink have all reported the conversion of staphylococci to resistance to a variety of antibiotics during the course of therapy with the respective antibiotics in question. And any doubt as to the identity of the resistant strains with the original antibiotic-susceptible strains was removed by the demonstration of their identical lysis patterns.

However Blair (8) points out that the emergence of antibiotic-resistant strains of staphylococci from lesions that had originally yielded antibiotic-susceptible staphylococci is not necessarily proof that the original strain had acquired resistance during therapy. He has found on several occasions that during the course of antibiotic therapy the original susceptible strain was eliminated, and was replaced by an antibiotic-resistant staphylococcus of an entirely different phage type, the most significant point being that the new strain was of a phage type which was identical with one of the strains of the reservoir of antibiotic-resistant staphylococci established in the hospital. Furthermore, and again significantly, this change in the character of the staphylococcus occurred for the most part in patients whose lesions had undergone surgery.

Bryson (11) has published a study in which he discusses the pros and cons of physiological adaptation versus genetic variability at considerable length, and he is of the opinion that our present state of knowledge is incomplete on this subject. However he draws attention to the fact that in producing extremely penicillin-resistant strains of staphylococci in in vitro experiments it is necessary to provide the organisms either with gradient concentrations of penicillin, or with concentrations of penicillin of progressively increased levels, step by step, an important part of the process being to provide sufficient time intervals to allow the multiplication of the most resistant emergent forms. Under these circumstances it is his view that the occurrence of penicillin-resistant strains of staphylococci in hospital patients is not consistent with the concept of gradual selective changes occurring within the patients, and consequently in patients receiving large doses of penicillin an exogenous source of resistant strains appears more probable than an endogenous.

In this connection it is my impression that not enough is yet known about the behavior of the staphylococcus in the body tissues to give a definitive answer at this time to the entire question of its development of resistance to antibiotics. It may be that an organism which is antibiotic-resistant in in vitro test is not resistant in vivo, and therefore it is difficult to determine whether the defervescence of the infection is due to the antibiotic alone, or to inindependently increased phagocytic activity of the patient's tissues, or to a new lease of life on the patient's phagocytic capabilities due to the antibiotic acting as an adjuvant just enough to tip the balance in favor of the defensive mechanisms.

If there is some difference of opinion as to the manner in which antibiotic-resistant strains of staphylococci appear in this or that patient there certainly appears to be general agreement among clinicians regarding the nature of the reservoirs of resistant strains of staphylococci in our hospitals. The burden of their observations can perhaps be summed up by quoting three of them. Blair (8) has said: "With the gradual elimination of antibiotic-sensitive strains there is set up in the hospital a reservoir composed of resistant strains that are transferred from person to person, are present in the environment, and represent an ever-present source of cross-infection," while, to quote Spink (4), ". . . the members of a hospital staff harbor antibiotic-resistant staphylococci to a considerable degree," and "there is ample evidence that the reservoir of antibiotic-resistant staphylococci resides on the mucous membranes and skin of hospital personnel and in the immediate environment of the hospital . . ." Bryson (11) puts it this way: ". . . patients in the surgical wards of hospitals do not develop their own penicillin-resistant strains by mutation, but acquire them as secondary infections from carriers, predominantly among the hospital personnel."

The statistics offered in support of these contentions are impressive. Spink, (12) referring to an epidemiological study conducted at the University of Minnesota Hospitals in 1954, has stated that of 208 staff members in the surgical group, thirty-two per cent were harboring nasopharyngeal pathogenic staphylococci, and that of these forty-one per cent were strains of resistant to more than 1,000 units of penicillin per ml.

Chester W. Howe (13) has described how a survey of patients and hospital personnel carried out at the Massachusetts Memorial Hospitals in 1953 showed that ninety-nine per cent were either nasopharyngeal or skin carriers of staphylococcus aureus, seventy-five per cent of the strains being penicillin-resistant.

Finland and Jones (5) have reported that in their spot survey of the wards of the Boston City Hospitals in January, 1956, they found that eighteen members of the resident house staff, widely distributed among the various services, were suffering from large furuncles or carbucles; nine others of the resident staff had recently recovered from staphylococcal infections; seven nurses were off duty because of staphyloccal infections; nine other nurses had recently been treated for staphylococcal skin infections; eight ward attendants were suffering from significant skin infections; and most of the house physicians and surgeons had been hospitalized part of the time on account of similar infections.

Writer after writer has emphasized the nasopharynx as the principal site of the carrier's staphylococci, but not every individual is, or, apparently can be a carrier. The reason for this is not clear. To quote Miles (2), "The nasal carrier state varies, not with the environment of the person, but with the person himself. There is a marked tendency for persons to be

either persistent carriers or persistently free from nasal staphylococcus aureus." While Knight (6) et al. in agreement with this, suggest that the essential control of the carrier state resides in factors present in the animal host, these factors being, for short periods at least, relatively independent of environmental influences. Their observations have led them to the conclusions that a small percentage of the patients constitute a high carrier rate group that provides the majority of the positive cultures, are usually carriers on admission, and remain so throughout hospitalization. It is their concept that when a nasal carrier shows a change from one strain of staphylococcus to another it represents replacement of staphylococci residing on mucous membranes with others from the environment. Spink (4) gives an account of a series of ten penicillin-resistant staphylococcal infections which occurred in postoperative wounds in a newly-constructed hospital near Minneapolis in 1953. All these were definitely traced by phage typing to the scrub nurse who was a nasal carrier.

According to Blair (8) the antibiotic-resistant staphylococcal carrier-state and the length of stay in the hospital environment are directly proportional to each other. Barber (14), Hayhoe and Whitehead found that among hospital nurses less than twenty per cent were carriers of penicillin-resistant staphylococci on their arrival at the hospital, but sixty-six per cent of those who had worked there for three months or more were carriers. Their findings among patients were essentially similar, except for the probably significant fact that it took the patients only two weeks to progress from a carrier rate of penicillin-resistant staphylococci of eighteen per cent to a rate of 55.5 per cent, while in a maternity unit the carrier rate of these organisms rose from ten per cent on admission to fifty-eight per cent in only ten days.

We must not forget to consider the part which the patient plays, albeit inadvertently, in promoting serious staphylococcal disease, a part for which the medical profession may not be altogether without guilt. As the result of improved medical care in general, and improved geriatric care in particular, very many aged debilitated patients, and patients suffering from chronic and wasting diseases, illnesses which would almost certainly have had relatively speedy fatal terminations a few years ago, are commonly being kept alive nowadays during prolonged hospitalizations. Such patients are obviously very poor candidates to repel the attacks of pathogenic microbes. They are some of the ones McDermott (1) had in mind when he talked of patients now being less well-equipped to face the same old risks as in years gone by. Others enumerated by him are the insulin-treated diabetics, children with splenectomies, adults with gastrectomies or pulmonary resections, and patients under therapy with corticosteroids.

Mention has been made of the medical profession being partly to blame. I think there can be little question that this is so. A good many writers have stressed the fact that because antibiotics have been available to combat any untoward infectious complications that might ensue, many of us have enjoyed a false sense of security, and carelessness and inferior sterile techniques have been tolerated in our hospitals on a scale which cannot be condoned. Patients have been and still are often given intravenous cannulations and injections without real necessity, and under conditions which are unsatisfactory. Yet again, antibiotic therapy is commonly resorted to on a basis of questionable clinical judgment, and, as Spink (4) says, with a choice of antibiotic drug that is not based on sound bacteriological reasoning. All too often, in my experience, it is resorted to on a basis of "when-in-doubt-give-a-shot-of-penicillin." It has in large numbers of cases literally amounted to shooting at small birds with heavy artillery, with gunners of uncertain aim. Irresponsible therapy of this sort can hardly be condemned too strongly. Neither can the widespread prophylactic use of such "broad spectrum" antibiotics as terramycin and aureomycin which seem, in fact, to be more bacteriostatic than bacteriocidal. These two preparations have been prescribed with a prodigality which has literally turned them into everyday household remedies in many a home, and in hospitals their routine use as pre- and postoperative prophylactic medications has almost certainly as Dearing (15) has suggested, played a major role in the elimination of the normal intestinal flora, thus leaving a bacteriological vacuum which pathogenic strains of antibiotic-resistant staphylococci have been quick to fill from their reservoir in the patient's nasopharynx.

Finland and Jones (5) draw attention to

another unfortunate therapeutic aspect of the situation. Their point is that impetuous surgeons are prone, through fear of antibiotic-resistant staphylococci, to rush into drastic surgical intervention in cases which are perhaps not progressing as swiftly as the surgeon would like, whereas if they persisted with conservative intelligently-administered antibiotic treatment the surgery would not be necessary. This ill-advised surgical interference has resulted, they maintain, in many instances of secondary invasion by resistant organisms which have sometimes led to fatal terminations of the cases. On the other hand medical men imperfectly acquainted or insufficiently impressed with the prevalence of antibiotic-resistant strains of staphylococci not uncommonly persist to an extent that may be dangerous to life, in continuing unavailing antibiotic treatment in the face of obvious failure, when a better understanding of all the factors involved would point out the perilous uselessness of further reliance on antibiotic therapy and indicate the need for recourse to surgery.

Well then, having delineated the problem, what corrective measures ought the medical profession to take? At this point in the discussion some of these desirable measures will be obvious, others less so. And since the subject is a large one we can only hope to outline the main points. In the first place since many of our hospitals, especially the larger ones, have apparently become reservoirs of antibiotic-resistant staphylococci as the result of their taking the place of susceptible strains that had been eliminated by the widespread use of penicillin and the tetracyclines, it would seem reasonable to suppose that the status quo ante might well be reinstated, over a period of time, if the use of these drugs were to be drastically curtailed, and other antibiotics to which the staphylococci were not yet resistant used in their stead.

Secondly, antibiotic therapy of any kind should be resorted to only when sound clinical judgment calls for it, and when the choice of antibiotic is clearly indicated on bacteriological grounds. Above all, antibiotics ought not to be used promiscuously for the treatment of minor illnesses, and the use of the "broad spectrum" antibiotics as prophylactics should be discontinued.

Thirdly, consideration might well be given by hospital authorities to the advisability of using antibiotic drugs on a rotational basis, allowing a period of, say, six months to each, this rule to be deviated from only under conditions of genuine emergency. Such a ruling would encounter obvious difficulties in civilian hospitals, but ought to be relatively simple to enforce in military hospitals where both authority and responsibility are vested in the commanding officers.

Next, with reference to the patient, one or two points would seem to be self-evident. At least for the present, and until the situation has been corrected, prudence would indicate that debilitated patients, and those with chronic or wasting diseases should be treated in their homes whenever practicable. If circumstances dictate that such a patient must be admitted to a hospital he should be treated in strict isolation. Similarily, obviously, patients with known staphylococcal infections should be isolated, especially those with open or exuding wounds, and those with staphylococcal respiratory infections. If this is not practicable they should at least be removed from surgical wards. It would be preferable, for instance, to treat such cases on medical wards, provided they were not in proximity to old or debilitated patients, and provided further that vigorous attention was paid to antiseptic and aseptic techniques in the changing of dressings. It will be readily appreciated that the immediate environment of such patients is frequently heavily contaminated with staphylococci, and hence bed clothing, etc., must be removed from them with the minimum of disturbance, while the dust in rooms and wards should be suppressed by daily oilings.

The over-riding importance of rigid adherence to aseptic techniques cannot be sufficiently emphasized as they apply to the administration of intravenous infusions and injections, and all such measures involving breaks in the skin should be kept to an absolute minimum. The routine use of masks and gloves by doctors and nurses while changing septic dressings in the wards would be a sensible precaution to prevent their becoming heavy carriers of pathogenic staphylococci. Indeed it would be preferable not to change dressings in the wards at all, but to change them in a special dressing-room with an oiled floor.

In the operating room the watch-word should once again be aseptic technique. Double masking and the changing of masks every two hours during long operations have been recommended

by Chester W. Howe (13), in addition to early control of serious wound infections by drainage, debridement, and surgical closure whenever possible. Routine bacteriological investigations of operating room staffs to reveal possible nasal carriers of pathogenic staphylococci is an obvious precaution. This entire subject has been covered in detail by Joan Stokes in her book "Clinical Bacteriology," and the interested clinician could hardly do better than conult this admirable work.

But it is only by painstaking and unremitting efforts to control each and every avenue of spread of the staphylococcus that we can hope to substantially reduce infection acquired in the hospital. To quote E. T. Bynoe, of Canada's Department of National Health and Welfare, "It requires the concerted interest and action of all hospital personnel – surgical, medical, nursing, and housekeeping staffs. This is the plea we are making today, and the approach we are stressing is a return to and an improvement upon Listerian principles of aseptic and antiseptic techniques in our hospitals."

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THE TENTH ANNIVERSARY OF THE CIVILIAN BLOOD PROGRAM OF THE AMERICAN RED CROSS

By Hugh H. Smith, M.D., Director
Southern Arizona Regional Blood Program
Tucson, Arizona

INTRODUCTION:

THE first Red Cross Blood Transfusion Service was started in London, England in 1921 (1). Interest in the development of blood collecting programs continued and in 1936 the Board of Governors of the League of Red Cross Societies, in Geneva, urged national societies to undertake such programs as a valuable form of public service.

The use of blood transfusions before World War II was not great. It has been established that between 1930 and 1935 there was a ratio of about one transfusion to 150 to 200 hospital admissions in the United States (2). At Cook County Hospital in Chicago Dr. Bernard Fantus and a small group of colleagues established a Blood Preservation Laboratory in 1937 (3). Almost immediately Dr. Fantus coined a new and more convenient term for his laboratory, namely "Blood Bank." In his view, the word "Bank" signified the saving of blood in a place from which it could be obtained whenever needed.

Later on in the same year, the Red Cross Chapter in Augusta, Georgia started operating the first American Red Cross blood donor service. Other chapters followed suit and within fifteen months there were a dozen such blood donor activities set up under Red Cross auspices in the United States (4).

It was not until World War II that blood really came into its own as a therapeutic agent. In February, 1941, at the request of the Federal Government, The American Red Cross Blood Donor Service was inaugurated on a national basis. During the war years a total of 13,326,242 pints of blood were collected under this program in urban centers and by mobile units visiting smaller communities. The greater part of the blood collected was processed into dried plasma or serum albumin for overseas use; some was used in the military hospitals at home as whole blood or liquid plasma and some 387,462 pints of group "O" whole blood were flown to bases overseas (5).

After the war, when thousands of physicians began returning from the armed forces to their practices, a demand arose that blood be made available for their civilian patients. In response to this demand, Red Cross chapters across the country developed several different kinds of blood programs. Between 1945 and 1947 well over a hundred "permissive programs" were launched. These programs functioned independently of each other and their development did not result in a uniform or cohesive system. Accordingly, officials of the National Red Cross after consultations with the United States Public Health Service, The American Medical Association, The American Hospital Association and other interested organizations decided to create a civilian blood program on a national basis. Therefore, in areas where blood requirements were not already being adequately met, the Red Cross Chapters were authorized to co-operate with state and local medical societies, health departments, hospitals and other qualified agencies in the procurement of blood for civilian use.

The first of the new regional centers under this national program began operating in Rochester, New York in January, 1948. The growth of the program has proceeded rather steadily. In some instances the regional programs cover almost a whole state. In other areas the program covers all or part of only one urban center. When the Korean emergency arose in 1950 there were 37 regional centers in operation. To meet national defense needs blood collections had to be greatly increased. During the five years that this emergency endured with the aid of fifteen special collecting stations and more than 120 mobile units, a total of 6,707,940 pints of blood were obtained for use by the Armed Forces, as dried plasma, albumin or whole blood. Of this amount, co-operating non-Red Cross blood banks supplied 960,920 pints.

Under its established policy, Red Cross proceeds with the organization of a new regional

center only upon the request of the local chapters concerned. The application must be approved by the Medical Society, the local hospital association and the health department of each community to be included in the region. As of the present, there are 51 such regional centers serving communities in 40 states and the District of Columbia.

To administer this program, a headquarters office in Washington and four area offices each have a small supervisory staff consisting of physicians, nurses, administrative and technical experts. Research and statistical services are centered in the National Headquarters. Standards for the whole program are set by the Director, who is advised by a Committee on Medical Policies and Procedures. This group is made up of outstanding professional and technical consultants.

The area offices are charged with the immediate supervision of the regional centers to insure safe medical and technical standards. Thus through the co-ordinating functions of the national and area offices is created a network of regional centers over the country forming a closely knitted organization operating under a unified supervisory staff.

BLOOD USAGE IN U.S.A.:

A recent survey of American hospitals by a committee of the Joint Blood Council (6) provides the following estimated figures for blood usage in the U.S.A. during the year 1956:

4,585,000 pints of blood used

1,399,500 patients received blood

2.3 pints administered per person (average figure)

It appears from the figures collected in this same survey that the regional centers maintained by the American Red Cross provided 38 per cent of all the blood used; hospitals that obtained blood from voluntary, unpaid donors provided 36 per cent; commercial blood banks, 11 per cent; non-hospital community blood banks, 9.5 per cent; hospitals that furnish blood to other hospitals, 4 per cent; and directly paid donors, 2 per cent.

In Arizona the estimated blood usage for transfusions in 1956 was 34,800 pints, of which the Red Cross program in the seven southern counties provided 12,539.

RED CROSS BLOOD PROGRAM IN ARIZONA:

In May, 1948 the blood collecting program of the Southern Arizona region was activated. This program is a co-operative activity of the medical societies, hospitals and the nine Red Cross Chapters in the following seven counties of southern Arizona: Pinal, Gila, Graham, Greenlee, Cochise, Pima and Santa Cruz. The Center for the Program is established in Tucson at the headquarters of the largest Red Cross Chapter of the region. A mobile unit makes a round of the other communities of the region on a regular schedule to draw blood from donors recruited by the local Red Cross chapters. The military establishments at Davis-Monthan and at Fort Huachuca have been particularly responsive to the appeals for blood. The population of the region, according to the estimates at the present time, is approximately 396,530.

The organization, methods and standards in use at the Southern Arizona program are strictly in accord with those evolved in the American Red Cross National Blood Program. Each regional center is inspected periodically by the professional and technical officers of the national and area offices. The Red Cross is licensed by the National Institutes of Health to collect and distribute blood products for human use. The maintenance of this NIH license depends upon the results of regular inspections by the representatives of NIH.

RECRUITMENT OF DONORS:

The most important part of any blood program is obtaining an adequate number of carefully selected volunteer donors to provide the required types of blood in amounts sufficient to meet the demand. In the Red Cross system this responsibility rests on the chapters participating in the regional program. Each chapter appoints its own Blood Program and Blood Recruitment Committees, who co-operate closely with the staff of the regional center. An effort is made to present the appeal for donors to the community as a whole and to all its various component parts. When the matter is presented on a sufficiently personal basis the response is generally good, as shown by the number of those belonging to the "gallon club."

Donors must be between the ages of 18 and 60 years. A careful history is taken with special emphasis on previous attacks of jaundice or exposure to cases of infectious hepatitis. A phy-

sician is on hand at all blood drawings to pass judgment on any dubious individuals and to judge the physical fitness of all prospective donors to give their blood.

BLOOD COLLECTION:

All blood procured in this program is voluntarily given by the donor and to the recipient. Blood drawings are scheduled either at the Tucson Center or by the mobile unit in the Tucson area and all other communities of the region.

All blood collected is processed and stored at the Tucson Center ready for distribution to hospitals and to clinics upon requisition.

Frequently, directed blood donations are collected from residents of the region for credit to relatives or friends hospitalized elsewhere in the country. Also, blood is supplied for use in the treatment of residents of the area covered by the program when they are hospitalized outside the region, if arrangements can be made with the blood center or blood bank concerned.

At present, blood is also being collected for the Federal Civil Defense Administration to be used for the preparation of a national reserve of serum albumin. The quota of blood for this purpose from the Southern Arizona Region is 1620 pints for delivery during the period of Nov. 1, 1956 and Dec. 31, 1957. Up to date, 1,989 pints have already been sent.

BLOOD DISTRIBUTION:

Blood is dispatched to each of the 27 participating hospitals in the region and to medical clinics upon requisition to meet estimated needs. Telephone service is provided 24 hours daily and every effort is made to fill emergency requirements as rapidly as possible.

Unused blood is returned to the Center for redistribution, or, if outdated, for plasma fractionation. The sterile pooled plasma is shipped to selected commercial laboratories with adequate facilities for producing valuable blood products. Experience at this Center has shown that approximately 9% of the blood collected is eventually used to obtain plasma fractions. The present arrangements are that the allocation of serum albumin to each regional center is based upon the actual amount of plasma sent in for fractionation. This limits the issue of this valuable product to the maintenance of small stocks in hospital pharmacies for use in surgical shock and burn cases. Albumin for the treatment of medical cases is issued, when available, upon application by physicians to the Director of the Blood Center. 2,149 units of 100 cc. each of serum albumin have been distributed without charge to patients since January 1953.

The supply of Red Cross gamma globulin is now allocated as follows: 40% to the health departments of the states and territories for issue to physicians for use largely for prevention or modifying measles and viral hepatitis; 40% to the 51 Red Cross regional blood centers for distribution to the physicians practicing in each region; and 20% of the gamma globulin is reserved for research purposes. This research is directed toward establishing the efficacy of gamma globulin in diseases where it is now being tried and in the investigation of new uses. 8,130 cc. of gamma globulin have been made available to physicians in Southern Arizona during the past three years.

Since 1954 purified preparations of fibrinogen, made from plasma, have been made available chiefly for use on an experimental basis in certain hemorrhagic conditions, principally in cases of post partum hemorrhage. Supplies of this blood derivative are quite limited. It is not yet established whether serum hepatitis results from its use, so physicians who obtain this product are requested to be on guard for the development of delayed jaundice in the recipient. Thus far, 71 ampoules of fibrinogen have been issued in the region since 1954.

BLOOD COLLECTION RECORD OF SOUTHERN ARIZONA CENTER:

Year	Total Pints Of Blood Collected	For Defense	For Use In So. Ariz. Region
1948	4,608	——	4,608
1949	8,050	——	8,050
1950	10,244	1,407	8,837
1951	18,541	8,580	9,961
1952	27,568	15,993	11,575
1953	21,751	10,059	11,692
1954	17,898	4,955	12,943
1955	13,304	549	12,755
1956	15,443	333	15,110
1957	*14,110	*1,638	*12,472
Totals	151,517	43,514	108,003

*Through Oct. 31st

RECIPROCITY:

As the number of blood transfusions increased, problems soon arose with people who wanted to donate blood for their families or friends hospitalized in distant parts of the country. Early efforts were made to meet this situation by informal arrangements between individual blood

centers. After some years of unsatisfactory experience, a formal reciprocity system was set up by the Red Cross with the central exchange located at National Headquarters.

Through the American Association of Blood Banks, a large number of non-Red Cross blood procurement facilities have also organized an effective system of exchanging blood that provides coverage over many communities of the nation.

Although there have been difficulties due to differences in administrative and financial arrangements, considerable progress has been made in working out methods of exchanging blood regularly between the Red Cross and the American Association of Blood Banks. Through these two national systems it should soon be possible for a patient hospitalized anywhere in the country to receive credits for blood donated for him in the region of his residence, or for persons in one area to give directed donations for the use of specified individuals living in other parts of the U.S.A. and Canada.

FINANCES:

The Red Cross Blood Program is a service designed to help provide blood and blood derivatives, without charge for the products, to the people who need them. The program has a dual objective: (1) Making blood and blood derivatives available to physicians to help safeguard the health of the community, and (2) Meeting large-scale needs for blood occasioned by disaster or national emergency.

During the early years of the program, the National Red Cross bore the major portion of the cost. Since all parts of the country were not covered by the regional centers, it soon became apparent that the local Red Cross chapters participating in the program must bear a larger share of the expense. This arrangement tended to work a hardship on the chapters in some communities and other methods of sharing the financial load were investigated. In 1954 the Board of Governors of Red Cross authorized regional centers to negotiate with the hospitals being supplied with blood by the program for arrangements by which they might share a part of the expenses for supplies required for the collection of blood and the cost of distributing the blood to the hospitals. Under this Hospital Participation Plan the agreed charge per unit of blood used may be passed on to the recipient of the blood, but no charge can be made for the blood itself. In 1956 this plan was modified to include "a part of the operational cost incurred in the collection, processing and distribution of the blood." During the current year the cost per pint of blood borne by the hospitals is $4.95. Of course, the hospitals also make a charge for laboratory work in cross matching and for administering the blood.

For the fiscal year 1957-58, the budget set up for the operation of the Southern Arizona Regional Blood Program calls for a total of $110,100. The sources of these funds are:

American National Red Cross	$23,938.00
Local Red Cross Chapters	26,781.25
Hospital Participation Plan	59,380.75
Total	$110,100.00

RESEARCH:

One of the most important aspects of the Red Cross Blood Program has been the stimulation of research. Investigations are going forward along three main lines:

1. Statistical — The large number of donors and their wide geographical distribution affords excellent opportunities for such studies as racial and regional differences in blood groups and hemoglobin levels. Studies on blood usage are also proving of value.

2. Techniques and equipment — Standard vacuum bottles, disposable donor sets, one-time use finger lancets, rapid-acting high-titer grouping and typing sera, light insulated chests for shipment of blood under refrigeration have been developed and standardized by collaboration between the Red Cross Blood Program staff and various manufacturers.

3. Plasma fractions — From outdated blood, plasma is separated and sent off to selected laboratories for fractionation. Proportionate amounts of gamma globulin, serum albumin and fibrinogen are returned for distribution to hospitals and physicians of the region for established therapeutic uses and for experimental clinical trials.

After separation of these well known fractions, about 35 per cent of the plasma proteins remain. A number of other derivatives from this residue are being tested by over 200 research groups both in this country and abroad to seek other useful therapeutic products.

SUMMARY:

During the ten years of its existence the National Red Cross Blood Program has come of

age, having demonstrated its usefulness both in peace and war. The country-wide network of regional centers, now numbering 51 in 40 states and the District of Columbia, provides approximately 38 per cent of the blood used in the United States by physicians for transfusions. The large scale operation of the Red Cross program provides excellent facilities for research on new blood fractions, for the development of techniques for improving equipment and for statistical studies on problems related to the use of blood in hospitals. The Red Cross program assures the facilities and trained personnel to implement immediately the blood collections that would be required in the event of another national emergency.

The appeal to citizens of all kinds throughout the community to give their blood as a service to their fellow man has met with good response as evidenced by the collection of over two million pints of blood in the Red Cross program during 1956.

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The President's Page

NOW THAT THE HOLIDAYS ARE OVER, THE SERIOUS BUSINESS OF LEGISLATION MUST BE TACKLED. FOLLOWING THE DIRECTION OF THE HOUSE OF DELEGATES, YOUR EXECUTIVE SECRETARY, DR. SAMUEL WICK OF ARIZONA STATE HOSPITAL AND MR. EDWARD JACOBSEN, LEGAL COUNSEL FOR ARIZONA MEDICAL ASSOCIATION, WERE TOLD BY THE LEGISLATIVE COMMITTEE TO DRAW UP A MENTAL HEALTH BILL SATISFACTORY TO DOCTORS, LAWYERS, JUDGES, ETC. THIS WAS DONE. IT WAS PRESENTED TO COUNCIL ON NOV. 24 AND APPROVED.

BY THE TIME THIS IS PUBLISHED, THIS BILL WILL HAVE BEEN INTRODUCED IN THE LEGISLATURE. THIS IS AN EXAMPLE OF YOUR ASSOCIATION IN ACTION. THE COMMITTEE RESPONSIBLE MEETS, TAKES ACTION, THE COUNCIL APPROVES OR DISAPPROVES, AND THE SOCIETY GETS BEHIND THE EFFORT. WE TRY TO BACK BILLS WHICH ARE FOR THE PUBLIC GOOD. THERE IS NOTHING WRITTEN INTO THIS BILL THAT SETS UP THE QUALIFICATIONS OF THE SUPERINTENDENT OF THE STATE HOSPITAL. THOSE QUALIFICATIONS ARE IN ANOTHER SECTION OF THE CODE. THE *RIGHTS* OF THE PATIENT FOR RELEASE ARE SPELLED OUT IN PLAIN, UNDERSTANDABLE LANGUAGE. HIS RIGHTS FOR PRIVATE OR PUBLIC HEARING ARE SPELLED OUT. AT NO POINT IN THE BILL IS THE PATIENT REFERRED TO AS INSANE, ONLY MENTALLY ILL.

I ASK THAT EACH AND EVERY ONE OF YOU PERSONALLY AND COLLECTIVELY AS COUNTY SOCIETIES CONTACT YOUR LEGISLATORS URGING PASSAGE OF THE MENTAL HEALTH BILL.

SEVERAL OTHER BILLS OF MEDICAL INTEREST ARE RUMORED TO BE IN THE PROCESS OF PREPARATION FOR INTRODUCTION, AMONG THESE IS THE RAW MILK BILL OF 1957. YOU WILL HEAR ABOUT THESE IF AND WHEN THEY ARE INTRODUCED.

YOUR LEGISLATIVE COMMITTEE IS VERY ACTIVE AND WILL LET YOU KNOW OF THE MERITS OF THESE BILLS.

AGAIN I ASK THAT EACH OF YOU GET TO KNOW YOUR LEGISLATOR. IN THAT WAY, HE WILL LISTEN WHEN YOU TALK TO HIM REGARDING A BILL IN PROCESS OF PASSAGE.

C. C. CRAIG, M.D., PRESIDENT
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Editorial Page

ARIZONA MEDICINE

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VOL. 15 JANUARY, 1958 NO. 1

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The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules must be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English, especially with regard to construction, diction, spelling, and punctuation.
2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.
3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.
4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.
5. Manuscripts should be typewritten, double spaced, and the original and a carbon copy submitted.
6. Articles for publication should have been read before a controversial body, e.g., a hospital staff meeting, or a county medical society meeting.
7. Exclusive Publication—Articles are accepted for publication on condition that they are contributed solely to this Journal. Ordinarily contributors will be notifed within 60 days if a manuscript is accepted for publication. Every effort will be made to return unused manuscripts.
8. Illustrations — Ordinarily publication of 2 or 3 illustrations accompanying an article will be paid for by Arizona Medicine. Any number beyond this will have to be paid for by the author.
9. Reprints — Reprints must be paid for by the author at established standard rates.

The Editor is always ready, willing, and happy to help in any way possible.

(The Opinions expressed in original contributions do not necessarily express the opinion of the Editorial Board.)

COUNCIL MEETING

Council membership — Resignation of G. Robert Barfoot, M.D. as central district councilor, and appointment by the council of Donald Polson, M.D. to fill this office until the next election.

Board and committee appointments — Alterations in this schedule are as listed in this issue of the Journal.

Council recommended five candidates to the governor to replace Elvie B. Jolley, M.D. on the state board of health membership. Dr. Jolley's term expires Feb. 1, 1958.

Audit of the association's books and accounts of the treasurer for the fiscal year April 1, 1956 to March 31, 1957 by R. C. Condit, CPA, reported. Accepted.

Council voted the establishment of the precedent to award retiring and past presidents of the Arizona Medical Association an appreciation plaque.

Arizona Medical Association was awarded a plaque by the AMA for the excellency of its contribution to the AMEF fund. A full report of the contribution of the state association to be rendered by Dr. Harold Kohl in the February issue of the Journal.

A review made of the annual report of committee on reports to the house as of April 11, 1957, with the specific recommendations to council. These factors were reviewed. No specific action taken.

Sterilization of certain inmates at the Arizona State Hospital is now being done after review of the cases by the Board of Medical Examiners. It is the recommendation of council that a specific committee be appointed to review this problem and that the committee serve with pay.

Medicare program was reviewed. Medicare contract No. DA-49-007-MD-806 Renewal Supplemental Agreement extending the contract from July 1, 1957 to Feb. 28, 1958. Modification No. 10, passed by council. Further the Supplemental Agreement Modification No. 10 was executed between the council and the negotiating team of the defense department. It is to be noted that this Medicare program is approximating a payment of $50,000 per month to the doctors of Arizona. The provisional claim rate

by Arizona Blue Shield with reference to the Medicare program has been reduced from $2.50 to $2.05 as their cost for processing each claim.

It was recommended by council that the central office be reimbursed for time as to the estimated cost of administration of the Medicare program.

Dr. Frank W. Edel reported on the Medicare adjudication committee operations and is to be commended on the excellency in which they have pursued this difficult problem. It was recommended to council that the Medicare adjudication committee be awarded per diem compensation for time spent in the adjudication of these cases.

Report submitted by the medical school committee, by Chairman D. W. Melick, M.D. The essence of this report was carried in the editorial appearing in the December issue of Arizona Medicine.

No specific recommendations were established with reference to the Western Regional Compact – Legislative Amendment Recommendations. The period of time for residency in Arizona should be cut from 10 years and that the repayment should be altered from its full repayment status as is now in effect.

Dr. Rhodes previously discussed this problem in an issue of Arizona Medicine, and recommended greater leniency.

The cancer education contest, sponsored by the Arizona Federation of Womens Clubs, received council approval. A discussion of this contest is presented elsewhere in this issue by Dr. Robert Leonard.

Membership Classification Changes

(a) Maricopa County Medical Society – 70-Year Dues Exemption: Mabel I. Adams, M. D., Henry L. Franklin, M. D., Clarence G. Salsbury, M. D. (Effective Jan. 1, 1958). Reinstatement: Edward Blank, M. D.–May 18, 1957.

(b) Pima County Medical Society – 70-Year Dues Exemption: Bryant B. Edwards, M. D., Ursus V. Portmann, M. D., (Effective Jan. 1, 1958). Service Membership: Raymond C. Spaulding Jr., M. D. Military service (temporary). Dues exempt. (Effective Oct. 8, 1957).

(c) Yavapai County Medical Society–70-Year Dues Exemption: James H. Allen, M. D. (Effective Jan. 1, 1958). Service Membership: William F. Holsey, M. D. VA Center – Whipple (permanent). (Effective Oct. 23, 1957–One-half dues).

Scientific assembly committee report confirming the annual meeting date at the San Marcos Hotel, Chandler, Arizona – April 30, May 1 through 3, 1958.

Report by Dr. Hayes W. Caldwell, chairman, subcommittee on insurance medical fee equalization previously listed in this Journal December 1957. Council accepted the report and appointed a special committee for continued investigation of this problem. The mental patient commitment bill was reviewed by Counsel Edward Jacobson and was accepted as discussed in the president's letter of this issue.

Federal legislation of medical services for OASI recipients was discussed by Dr. Jesse Hamer. See AMA comment in this issue.

Report by Dr. Lindsay E. Beaton, chairman of the industrial relations committee covering the revision of the industrial fee schedule, which unfortunately has received unanticipated and regrettable delays. A clarification of the industrial commission's consultation rules was presented. This has previously been submitted to the members. A discussion carried out of the probable needs for legislative amendments to permit "a free choice of physicians" by all patients, particularly those covered under the Industrial Commission Act. This included a limited discussion of the so-called "closed panel practice," and the restricting clause of 59A in the Industrial Commission Act.

LETTER TO THE EDITOR

DEAR DR. NEUBAUER:

Here is the article assigned to me for the January issue of Arizona Medicine. As nurse recruitment chairman for this year, I thought that there would be widespread interest in factual material about the new collegiate schools of nursing. I think it is important that we understand the reason for the need of these collegiate programs, since 13.8 per cent of all nursing students are enrolled in collegiate programs. The typical reaction to this is, "What we need is more bedside nurses and fewer bosses." This attitude of both lay and professional people must be challenged on the basis of facts, in the light of future need. There is no dearth of material to support these theories, but most of us do not take the time to acquire the information, nor would we know where to go to get it.

I would like to suggest that Arizona Medicine run a series on nursing education and perhaps the allied sciences, by experts in the fields. To be included would be the requirements, facilities available in Arizona, the advantages, etc.

Doctors and their wives, by virtue of their interests, are placed in the position of advisor to many young people. We are at a disadvantage when we have so little factual information. We fall down on our job in recruitment, and this is very poor public relations. Many of us fail in our support in these fields, simply because we know so little about them. They need and deserve our support. It is imperative for the success of these new ventures that the medical community is behind them. It is imperative that the collegiate nursing schools be successful, for they are almost always the precursors of a medical center, or medical school. That dream may become reality, too, someday. Meanwhile, let's learn about what we have now, and support it to the best of our ability.

BROWNIE DUDLEY (Mrs. Arthur)

Topics of Current Medical Interest

WMA ACTS TO PROTECT CUBAN DOCTORS AGAINST POLITICAL PERSECUTION

ACTING TO uphold the principle that belligerents are entitled to medical care without discrimination or fear of reprisal, the World Medical Association has moved to investigate reports that certain Cuban doctors have been persecuted and murdered while carrying out their humanitarian service to the sick and wounded.

A request has been made by the recent 11th general assembly that a committee of representatives of the World Medical Association be authorized to visit Cuba in order to investigate "alleged persecutions of the medical profession attending the sick and wounded." This request was made directly to the president.

The Cuban president was further requested to "guarantee the rights of Cubans to testify before the committee without fear of reprisal." It was emphasized, of course, that this committee "would not be concerned in any way with the political aspects of the situation in Cuba."

Members of the World Medical Association accept the principles of the Declaration of Geneva, which asserts the right of all patients to receive, and of all doctors to give, the medical care any person needs regardless of any consideration whatever, political or otherwise.

The World Medical Association proposes to fight for this principle anywhere, at any time, and with all its resources.

RESTRAINT URGED IN USE OF X-RAYS WITH NEWBORN AND IN PREGNANCIES

A group of specialists in health fields, after a day's discussion of the advantages and problems in use of diagnostic X-rays in care of pregnant women and children, came up with an appeal for restraint. The session was called by the children's bureau, with Bureau Chief Katherine Brownell Oettinger presiding. In attendance were radiologists, pediatricians, obstetricians, dentists and public health workers. They agreed that, used under proper conditions, X-rays were invaluable, and they noted a general interest in the medical profession in promoting more knowledge and better observation of precautions in use of X-rays. It was emphasized that too many parents demand X-rays, in the mistaken belief they are essential to an examination, and that parents' best contrbution would be to refrain from pressing for X-rays when the physician or dentist did not recommend them.

It was reported that a number of states had outlawed the dangerous use of fluoroscopes in fitting shoes, and that other states are considering restrictions. X-raying newborn to discover enlargement of the thymus "is no longer considered good medical practice," the conference said, as "this condition is not the cause of trouble it once was thought to be."

FEDERAL MEDICAL-HEALTH SPENDING FOR FISCAL YEAR 1958

(July 1, 1957 to June 30, 1958)

THIS is an annual budget report in which are grouped together all federal health or medical programs, their objectives described, and their cost to the U.S. taxpayer listed. At least 23 federal departments and agencies engage in some medical activity. Despite the "economy drive," these programs approximate those of last year at about $2.5 billion.

The figures shown do not include all administrative costs. If a modest 2 per cent increase is added to cover overhead, "central-service-type" costs, the totals would have to be increased by about $50 million.

Appended to this report is essential information on the amount of payments to disabled individuals where the federal government puts up all or part of the money. Disability benefits go to 4.5 million persons. The total payments this year will exceed $3.2 billion. Some of this expense is wholly federal, some includes state funds, some employer contributions and some employe contributions. Well over 80 per cent of the entire amount is from U.S. general revenue. The remainder of the federal share is from social security and railroad payroll taxes.

In evaluating this report, remember the $3.2 billion figure includes matching amounts from non-federal sources—the $2.5 billion figure does not.

We are grateful to federal program and budget officers for furnishing material for this report. *Medical-Health Budgets Of Federal Departments Agencies and Commissions For This Fiscal Year.*

AGENCY	AMOUNT
Department of Health, Education, and Welfare	$849,395,800
Veterans' Administration	849,374,000
Department of Defense	702,305,000
Atomic Energy Commission	40,085,000
International Co-operation Administration	37,300,000
Department of State	15,718,110
Federal Employes' Health Program	10,000,000
Department of Labor	8,069,476
National Science Foundation	7,500,000
Panama Canal Company & Panama Canal Zone Government	5,988,300
Department of Treasury	3,837,850
District of Columbia	3,700,000
Federal Civil Defense Administration	3,100,000
Department of Justice	1,796,000
Federal Trade Commission	1,500,000
Department of Commerce	911,300
Civil Service Commission	387,000
President's Committee for Employment of Physically Handicapped	182,575
Department of Interior	154,950
Office of Defense Mobilization	77,000
Small Business Administration	70,000
National Advisory Committee to Selective Service	19,000
Office of the Attending Physician of Congress	12,145
Total	$2,541,483,506

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

($849,395,800)

Division of Hospital Facilities Total $122,650,000

This division administers the federal aspects of both the original and expanded Hill-Burton programs. Total appropriations are divided into the following four categories:

Hill-Burton Original Program.....$99 million

This appropriation, allotted to the states on the basis of population and per capital income, assists in the financing of new hospitals and related health facilities construction under the original Hill-Burton program. To date, federal funds have partially financed approximately 3,170 projects, including 145,400 hospital beds, 695 public health centers, 21 state health laboratories and something in excess of 100 nurses' homes and training facilities. Since 1946, the inception of the program, federal contributions represent $852 million; when the sponsors' share is included, the total is $2,687,000,000.

Medical Facilities--Category Program $21 million

The total allotted to the states this year on a population-per-capita-income formula will assist in the financing of new construction under the 1954 amendments in four categories as follows: $6.5 million for hospitals for the chronically ill and impaired; $6.5 million for diagnostic centers, or diagnostic and treatment centers; $4 million for nursing homes; and $4 million for rehabilitation facilities. As under the original program, the federal share may range from one-

third to two-thirds of the total project cost. As of July 1957, a total of 344 projects had been approved divided among the four categories as follows: facilities for chronically ill (71), diagnostic-treatment centers (131), nursing homes (80), and rehabilitation facilities (62).

Hill-Burton Administrative Expenses.$1,450,000

This appropriation is used for administration, including salaries and expenses for the hospital survey and construction program for the federal headquarters and for eight regional federal offices.

Research .....$1.2 million

Authorized in 1949 but not appropriated until 1955 is this item for research, experiments and demonstrations on utilization of hospital services, facilities and resources. The bulk of the money is assigned as grants to states, universities, hospitals, hospital associations, professional associations, and community organizations and a small amount for direct research by the U.S. Public Health Service.

National Institutes of Health.Total $241,183,000

National Cancer Institute.....$56,402,000

About 65 per cent of this appropriation is earmarked for grants to non-federal individual investigators and private institutions for research and training. States receive $2.25 million for cancer control work. The balance is used for direct operations, salaries, supplies, and for this institute's share in the cost of operating the Bethesda (Md.) clinical center and related auxiliary services.

National Heart Institute $35,936,000

Grants to non-federal individual investigators and public and private institutions for research and training take about 75 per cent of the appropriation. $2,125,000 is allocated to states for heart disease control. The remainder is for direct operations, such as salaries and supplies, and to support the clinical center.

Mental Health Institute $39,217,000

Approximately 80 per cent of this appropriation is apportioned for research and training through grants to individual investigators and public and private institutions. The sum of $4 million is allocated to the states for community mental health services. The remainder will support direct operations, such as salaries, expenses and to help finance the clinical center and for related auxiliary research services.

Arthritis & Metabolic Diseases

Institute $20,385,000

Grants to public and private investigators for research and training total 75 per cent of this appropriation. The remainder will go for direct operations, such as salaries and supplies and clinical center support.

Neurological Diseases & Blindness

Institute $21,387,000

Grants to public and private investigators and institutions for research and training total 75 per cent of this appropriation. The remainder is for direct operations, such as salaries and supplies and support for the clinical center.

Allergy & Infectious Diseases

Institute $17,400,000

Research grants to public and private investigators for research and training amount to 60 per cent of this appropriation. The remainder finances direct research and other related services of the Institute.

Dental Health Institute $6,430,000

This appropriation is divided as follows: (a) for research and fellowships, $3,825,000; (b) direct research at Bethesda, $1,184,000; (c) review and approval of research grants and fellowships, $102,000; (d) administration, $107,000; (e) technical assistance to states, $911,000; and (f) co-ordination and development of dental resources, $301,000.

National Institutes of Health—

General Funds $14,026,000

These funds are administered by the division of research grants of the National Institutes of Health, with practically all funds being expended for research and training grants, with the exception of $2,105,000 for control of biologics (including polio and flu vaccine), which activity is under the division of biologics standards. The balance goes toward supporting fellowships and administrative expenses relating to grants.

Laboratory Research Construction

(NIH) .....$30 million

There is available for planning and construction of research facilities $30 million, the authority for which is Public Law 835 (84th congress). To be eligible for grants, the applicant must be a public or nonprofit institution determined by the surgeon general, after consultation with the National Advisory Council on Health Research Facilities, to be competent to engage in the type of research for which the facility is to be constructed. This year will be the second full year of operation for this program.

Water Pollution Control .....$47.5 million

Under a new law enacted in 1956 (Public Law 660), the federal government makes grants for waste treatment plants. There was approximately $2.5 million left from last year's $50 million appropriated funds and the congress has authorized that these funds be carried into the current fiscal year. In addition, $45 million was appropriated for fiscal 1958. This will assure that the program will continue at the same level as last year.

Hospitals and Medical Care.....$44,399,000

These funds are used for operational costs and maintenance of PHS hospitals and health services in caring for American seamen, coast guard and Public Health Service personnel and their dependents, federal employes injured at work, leprosy patients and narcotic addicts; includes studies in the development and co-ordination of nursing resources. It also includes $1 million for grants to Hawaii for care of patients suffering from leprosy and $3 million for nurse training grants. Not shown is approximately $3 million additional income from other federal agencies for reimbursable items.

Indian Health Activities $43,230,300

Under Public Law 568 (83rd congress), PHS assumed responsibility for the health of American Indians and natives of Alaska which formerly was a function of the interior department. The total is broken down as follows: hospital care in Indian hospitals, $23,153,000; contract patient care, $8,313,000; field health services, $6,536,000; program direction and management services, $2,098,300; and modernization of hospitals and construction of facilities $3,130,000. In addition, the Indian health activities of PHS will receive approximately $740,000 as reimbursements from other governmental agencies for services rendered in PHS facilities.

Assistance to States—General $22,592,000

Grants totaling $15 million will be available for allocation to the states in support of state and local general public health activities. These grants must be matched one state dollar for every two federal dollars. U.S. Public Health Service will spend $5,592,000 to provide technical assistance, consulting services to states, expenses of the national office of vital statistics, international health activities, demonstrations, training activities, and operational expenses. A total of $2 million will be available for grants to schools or direct traineeship awards to individuals for the training of professional public health personnel. In this program, matching will be required.

Sanitary Engineering Activities.....$12,640,000

This program is made up of seven activities as follows: air pollution control, $4 million; water supply and water pollution control, $6.5 million; radiological health activities, $395,000; milk and food sanitation activities, $490,000; interstate carriers and general sanitation activities, $510,000; sanitary engineering center research activities, $440,000; and administration, $305,000.

Tuberculosis Control .....$7 million

Grants to states for diagnostic and treatment clinics, mass case-finding and follow-up services account for $4.5 million, all of which has to be matched equally by the states. The remainder is for direct operations of PHS.

Communicable Disease Control..$6.25 million

The entire appropriation is used for direct activities of the PHS Communicable Disease Center at Atlanta, Ga., and its affiliated operations. The center carries on studies in epidemiology, furnishes laboratory diagnostic services, and sponsors special projects to assist states.

Office of the Surgeon General ....$5.1 million

For administrative expenses of this office, including all housekeeping services, evaluation of public health needs, and personnel training. Included also is approximately $1.2 million for administration of the National Health Survey Act authorized by Public Law 652 (84th congress).

Venereal Disease Control $4,415,000

Of the total, $1.7 million goes for a direct grants to states for venereal disease detection, treatment and control on a special-need basis. The remainder is spent for technical assistance to the states, mostly to pay 247 federal employes, the majority of whom are assigned to state health departments.

Foreign Quarantine Service $3,876,000

This service operates approximately 315 medical quarantine stations on the borders of the United States. It also operates approximately 25 medical examination stations on foreign soil for the examination of aliens seeking visas to enter the U. S. Inspections are made of all seagoing vessels and aircraft entering the U. S. It is estimated that the service will examine 3 million aliens in this country, and 225,000 abroad.

Asian Flu Program .....$2.8 million

Direct appropriations to PHS amount to $800,-

000, most of which will be spent at the PHS Communicable Disease Center at Atlanta, or under its direction. These funds will be used to assist states in establishing programs for the control of this disease. Congress gave the service contingent authority to use up to $2 million from the President's disaster relief fund in the event of widespread epidemic. The $2 million is for supplies and materials and cost of administering programs by the states. If flu reaches major proportions, it is possible that part of these funds will be used to call up reserve public health officers to assist in controlling the disease.

Alaska Health and Sanitation Programs $2,165,000

This appropriation will be divided as follows: $638,000 for grants to the Territory for public health services and $527,000 for research activities of the Arctic Health Research Center at Anchorage. The remaining $1 million will be used to enable the Territory to pay for hospitalization for Alaska's mentally ill at Morningside Hospital in Portland, Ore.

National Library of Medicine $1,450,000

As a result of Public Law 941 enacted in 1956, the army medical library has been renamed the National Library of Medicine and transferred to the department of health, education, and welfare. While a new structure has been authorized to house the library, only operational funds and planning money have been made available by congress for this fiscal year.

Reimbursable Health Program for Other Governmental Agencies.....$475,000

This represents the cost of services expected to be advanced to Public Health Service by other governmental agencies for establishing and operating on-the-job clinics. PHS deals largely with Washington personnel, whereas 90 per cent of the total number of the government employes are located outside the greater Washington area.

Freedmen's Hospital .....$3 million

This institution with an average patient load of 328 plus 32 new-borns, is a medical teaching facility and general hospital. Its patients are chiefly medical indigents from the District of Columbia and the adjoining area. The hospital is utilized for training of interns and residents, chiefly from Howard University and it has a nurses' training school. A total of $4,121,000 is authorized for operating cost. All in excess of $3 million (appropriated for fiscal 1958) are expected reimbursements from charges made to patients and payments made by the District of Columbia and other federal agencies and from the counties surrounding Washington who utilize these facilities for welfare patients. Some supervisory functions over this program is vested in PHS.

Howard University .....Approx. $1,136,000

This university came into being shortly after the close of the Civil War because of the lack of higher educational facilities for Negroes. It is jointly supported by congressional appropriations and private funds and offers instruction in 10 schools and colleges, including colleges of medicine, dentistry, and pharmacy. This year the university's total operational budget is in excess of $7 million. Of this amount, the federal government will contribute $3.8 million toward operational expenses, $150,000 for plans for construction, and $262,000 for additional equipment for the dental college. The combined budgets for the colleges of medicine, dentistry and pharmacy will require approximately 19 per cent of the university's total budget. The entire student body of the university for 1957-58 will be approximately 5,200. There are 325 students enrolled in the college of medicine, 278 in the college of dentistry, and 140 in the college of pharmacy. The federal contribution for direct current operations in the colleges of medicine, dentistry and pharmacy totals approximately $874,000, according to the university's treasurer. When the federal contribution for additional equipment for the dental college is added to this amount, the total identifiable federal contribution to health activities of the university for this year becomes $1,136,000.

St. Elizabeth's Hospital.....$15,904,500

St. Elizabeth's provides treatment for several classes of mentally ill persons, including those residing in the District of Columbia, beneficiaries of the veterans' administration, beneficiaries of Public Health Service, insane persons charged with or convicted of crimes in U.S. courts (including the Court of the District of Columbia), certain American citizens found insane in Canada, the Panama Canal Zone and the Virgin Islands, certain foreign service personnel, and members of the military services admitted to the hospital prior to July 16, 1946. Congress appropriated $3,085,800 to this institution for operational expenses, $55,000 for major repairs, and $180,000 for construction planning. Reimbursements from other agencies will ap-

proximate $12,583,700. This hospital has an average daily patient load of 7,500.

Bureau of Public Assistance

(Medical Payments)...Approx. $150 million

Out of a total budget of approximately $3 billion (federal and state) for categorical public assistance programs, officials of the social security administration estimate that approximately 12.5 per cent is now being devoted to health care of recipients. For all facets of living expenses and medical care, the total federal contribution this year will exceed $1.6 billion. An estimated $380 million of federal, state and local funds is expected to be paid for medical and health needs of categorical recipients this fiscal year, and $280 million will be paid to vendors of medical care, such as physicians, hospitals, pharmacists, nursing homes, etc., of which $90 million will be federal. It is expected that $100 million will be paid directly to recipients for their medical care needs. Of this amount, the federal contribution will be approximately $60 million. The U.S. share for both medical payments to recipients and to medical vendors will be about $150 million.

Office of Vocational Rehabilitation..$50,830,000

Under the expanded Vocational Rehabilitation Act (Public Law 565, 83rd congress), congress this year voted $49.5 million for grants to states and other agencies. This is divided as follows: (a) support of basic rehabilitation services including medical examinations, surgical and therapeutic treatment, hospitalization, prostheses, occupational tools and aids, vending stands, rehabilitation facilities, vocational training and funds for maintenance (based on per capita income and population as in Hill-Burton), $40 million; (b) extension and improvement of state programs, $1 million; (c) special grants to states or nonprofit organizations for projects designed to expand the rehabilitation program (2-1 federal-state matching), $3.6 million; (d) $4.4 million is available for training of rehabilitation personnel, including physicians, therapists, psychologists, counselors, medical and psychiatric social workers. In addition, $1,330,000 is available for federal administrative costs.

Children's Bureau .....$32.3 million

Operating under the Social Security Administration, the children's bureau administers grants to states for maternal and child health, and crippled children's and child welfare services. This year grant money totals $41.5 million, divided as follows: $16.5 million for maternal and child health work; $15 million for crippled children's services; and $10 million for child welfare services. However, this last item has no medical significance and, therefore, it is not reflected in the total of $32.3 million. One-half of the federal funds for maternal and child health and crippled children's services is required to be matched dollar for dollar by the states. In addition, the children's bureau has $2 million to finance investigating and reporting activities and to administer all the grants. About 40 per cent of this amount is chargeable to the health and related activities of the children's bureau which include administration of grants for maternal and child health and crippled children's services and consultative services to state agencies and other public and voluntary agencies and organizations engaged in the provision of maternal and child health services.

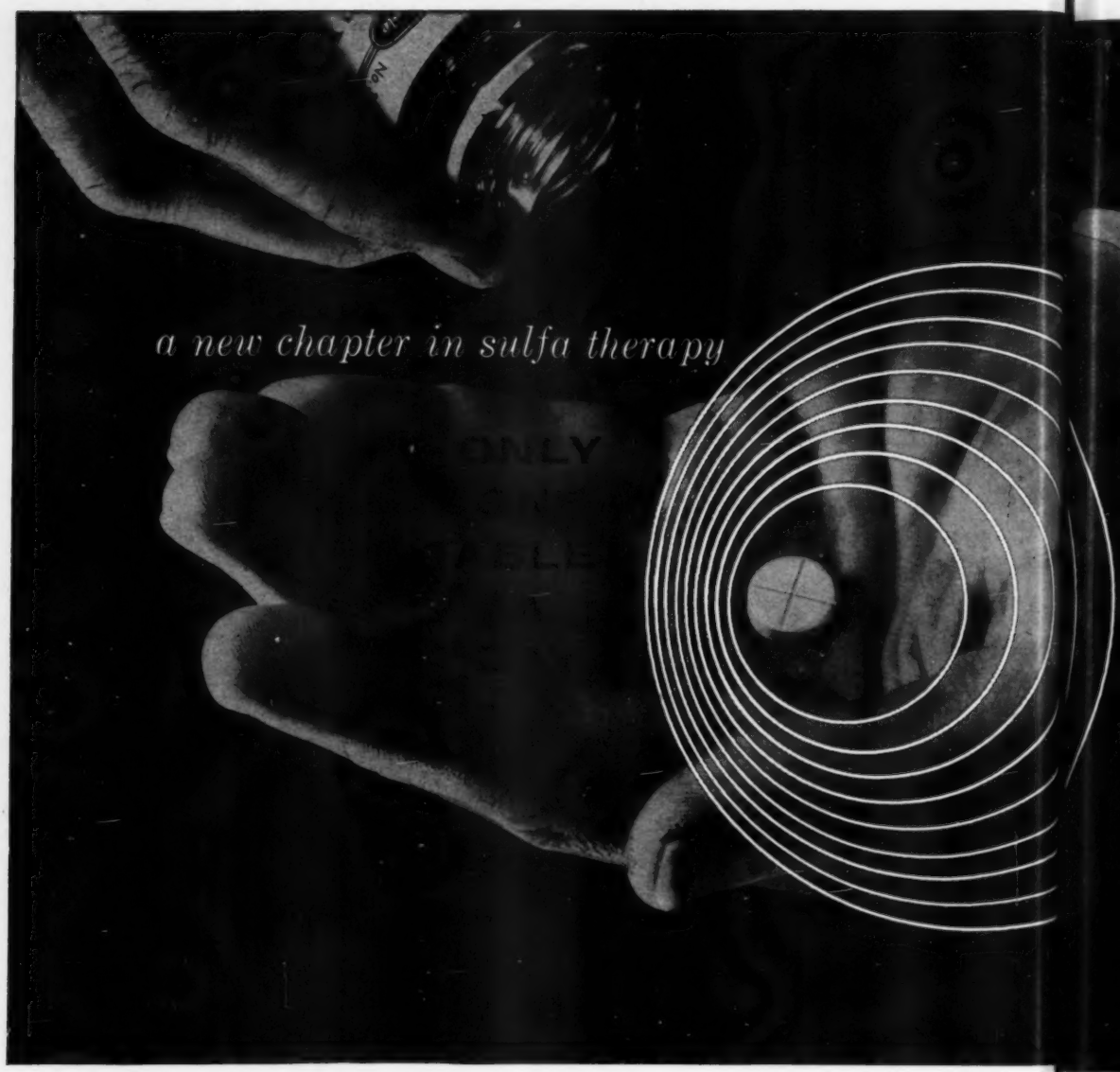
Federal Surplus Property

Donation Program...Approx. $15.2 million

The department of HEW has authority to make donations of personal property and transfer of real estate declared surplus by federal agencies for health needs. In the case of real estate, conditional title is vested in the transferee and then after a number of years of utilization of the property in accordance with imposed conditions, the property can become absolutely vested. Recipients of personal property may be medical institutions, health centers, hospitals and clinics. Eligible donees of real property may be any institutions organized for health purposes, including those engaging in medical research. It is difficult to determine the exact value of property donated and transferred, since accounting is on the basis of acquisition cost. Last year approximately $47 million of personal property (acquisition value) was donated for health purposes which had a fair market value of approximately $14 million. During the same period, approximately $2.5 million of real estate (acquisition value) was transferred with a fair market value in excess of $1.2 million. It is expected that the level of donations and transfers for the current fiscal year will be in line or slightly in excess of last year's totals.

Food and Drug Administration.....$9.3 million

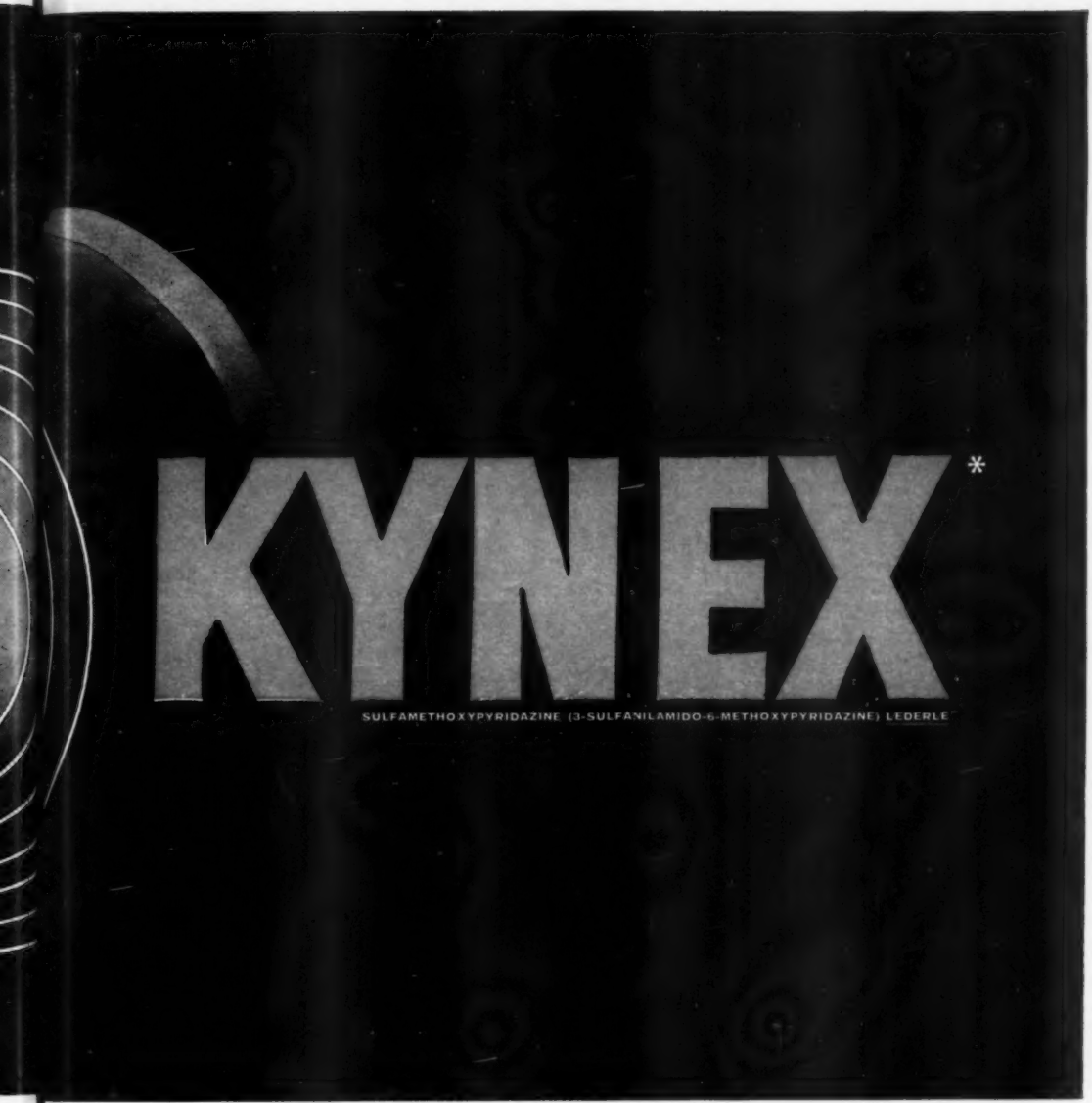
For administering the Food, Drug and Cosmetic Act, congress voted the above funds. FDA will also realize an estimated $1.2 million from fees paid by industry for certification of biolog-



New authoritative studies show that KYNEX dosage can be reduced even further than that recommended earlier.[1] Now, clinical evidence has established that a single (0.5 Gm.) tablet maintains therapeutic blood levels extending beyond 24 hours. Still more proof that KYNEX stands alone in sulfa performance—

- Lowest Oral Dose In Sulfa History—0.5 Gm. (1 tablet) daily in the usual patient for maintenance of therapeutic blood levels
- Higher Solubility—effective blood concentrations within an hour or two
- Effective Antibacterial Range—exceptional effectiveness in urinary tract infections
- Convenience—the low dose of 0.5 Gm. (1 tablet) per day offers optimum convenience and acceptance to patients

1. Nichols, R. L. and Finland, M.: *J. Clin. Med.* 49:410, 1957.



NEW DOSAGE. The recommended adult dose is 1 Gm. (2 tablets or 4 teaspoonfuls of syrup) the first day, followed by 0.5 Gm. (1 tablet or 2 teaspoonfuls of syrup) every day thereafter, or 1 Gm. every other day for mild to moderate infections. In severe infections where prompt, high blood levels are indicated, the initial dose should be 2 Gm. followed by 0.5 Gm. every 24 hours. Dosage in children, according to weight; i.e., a 40 lb. child should receive ¼ of the adult dosage. It is recommended that these dosages not be exceeded.

TABLETS: Each tablet contains 0.5 Gm. (7½ grains) of sulfamethoxypyridazine. Bottles of 24 and 100 tablets.

SYRUP: Each teaspoonful (5 cc.) of caramel-flavored syrup contains 250 mg. of sulfamethoxypyridazine. Bottle of 4 fl. oz.

LEDERLE LABORATORIES DIVISION, AMERICAN CYANAMID COMPANY, PEARL RIVER, NEW YORK

*Reg. U. S. Pat. Off.

ics, insulin, etc.

U.S. Office of Education.....$4 million

For a number of years, the office of education has been making grants to states chiefly for vocational education. It is estimated that during the last fiscal year, approximately $2 million in grants was used to educate practical nurses. For this year, the office of education has available $33,750,081 for grants to states, of which $4 million is earmarked for the practical nurse training program.

VETERANS' ADMINISTRATION
($849,374,000)

*In-Patient Care in VA Hospitals** $657,071,000

VA's largest single medical expenditure covers in-patient care in 173 VA hospitals and provides for an estimated 122,299 beds. At present VA reports an estimated daily patient load of 111,900, approximately 91.5 per cent of bed capacity. The appropriation includes salaries of physicians and other personnel, medical rehabilitation of veterans, dietetic and nursing services, social services and special services, such as recreation and transportation of veterans.

*Out-Patient Care**.....$79 million

The bulk of this appropriation is for out-patient care in about 100 VA clinics. The remainder is earmarked for fees to physicians ($8,112,000) and dentists ($2,390,000) under the hometown care program.

*Modernization and Replacement Construction** .....$42 million

This amount is for work on existing units where costs exceed $250,000 per project and equipment for new units. The money is available until expended. (See Alterations and Improvements item for small projects.)

*Domiciliary Care** $31,490,000

Domiciliary care is being provided in 17 VA facilities for about 16,600 veterans who, while incapacitated for employment, are not in need of full hospital care. VA also makes payments to 30 state veterans homes with a daily patient load of approximately 9,300. Payments this fiscal year are estimated at $6,446,000. Under Public Law 613 (83rd congress) federal contributions to these homes were raised from a maximum of $500 to $700 a year per patient.

*Contract Hospitalization** $13,389,000

This appropriation finances an average daily patient load of roughly 3,000 veterans in federal hospitals other than VA and in state and municipal hospitals. Patients in federal non-VA hospitals are estimated at 1,324 and in non-federal hospitals, 1,676. Mental cases make up the largest single category of contract cases.

*Medical Administration** $7,862,000

To operate the VA department of medicine and surgery in the central office and the seven area medical offices; included are salaries, travel and like expenses.

*Medical Research** $11,344,000

For research, mostly in VA hospitals. The breakdown: general medical and surgical research, $5,970,700; atomic medical research, $1,945,000; prosthetics testing, $1 million; neuropsychiatric, $1,507,130; tuberculosis, $846,670; other, $74,500.

*Alterations, Improvements and Repairs** $2,028,000

For alterations, improvements and repairs to VA clinics and domiciliaries (costing less than $250,000 per project).

*Supply Depot Operations** $1,790,000

For maintaining and operating supply depots handling the purchase, shipping and storage of medical supplies and equipment used by the department of medicine and surgery.

*Medical Education and Training**....$1 million

For VA training programs for physicians and other VA personnel, in medical specialties and auxiliary services.

Medical Care — Philippine Veterans..$1 million

Until 1960, the U. S. will contribute for the medical care of Philippine veterans.

*In appropriating for VA, congress stipulated that the funds were predicated on furnishing care and treatment for 140,800 beneficiaries during this year. This total of beneficiaries was arrived at by adding the estimated number of veterans to be cared for in VA hospitals, domiciliary facilities, contract hospitals, and state veterans' homes. There is no way of estimating whether more or less patients than this total will be cared for during the year. If VA doesn't furnish care at this level, its funds will be reduced proportionately.

DEPARTMENT OF DEFENSE
(Approx. $702,305,000)

*Army Medical Services** ..Approx. $270 million

The estimated cost includes expenses normally associated with the operation of military hospitals and dispensaries, military and civilian salaries, medical supplies and equipment, utilities, communications, transportation, travel subsistence, maintenance and repair of buildings and grounds, expenses for construction, dependent medical care, medical education and training, medical research and preventive medicine.

Air Force

*Medical Services** .....Approx. $211 million

The estimated cost includes expenses normally associated with the operation of military hos-

pitals and dispensaries, military and civilian salaries, medical supplies and equipment, utilities, communications, transportation, travel subsistence, maintenance and repair of buildings and grounds, expenses for construction, dependent medical care, medical education and training, medical research and preventive medicine.

*Naval Medical Services** ..Approx. $220 million

The estimated cost includes expenses normally associated with the operation of military hospitals and dispensaries, military and civilian salaries, medical supplies and equipment, utilities, communications, transportation, travel subsistence, maintenance and repair of buildings and grounds, expenses for construction, dependent medical care, medical education and training, medical research and preventive medicine.

Office, Asst. Secretary of Defense (Health & Medical) .....Approx. $105,000

For salaries, travel and administration of this office, and for travel expenses and consultant fees for the defense department civilian health and medical advisory council.

*A defense department source gives this explanation: All dollar amounts are estimated and have been rounded because military appropriations are not broken down into categories of medical expenditures. The estimated reduction in the total military medical program during fiscal year 1958 (down $88 million) is primarily attributable to: (a) a reduction in military strength and also fewer military dependents requiring care in military facilities, (b) a sharply reduced hospital construction program, and (c) employment of fewer medical personnel to take care of a smaller number of beneficiaries. It is estimated that the average daily patient load will be 2,000 fewer in military facilities due to the cut in military strength. Hospital construction costs during the fiscal year will be substantially less than last year. Most of this reduction will affect the air force. It is estimated that in the combined military services, in-patient hospital care this year will cost about $292 million. Out-patient care, which will cost $166 million because of approximately 35 million out-patient visits, excluding dental visits, reflects a reduction in workload because of reductions in military and dependent population. The overall cost of dependent medical care for dependents in civilian facilities has been running slightly in excess of $5 million per month. It is estimated that it will cost approximately $62 million for the current fiscal year.

ATOMIC ENERGY COMMISSION
($40,085,000)

The Atomic Energy Commission's division of biology and medicine has about $7.9 million more than last year for research projects. This year's total includes the following spending plans: cancer ($3 million), other medical ($11,656,000), biological ($12,391,000), biophysical ($2,159,000), development of new laboratory equipment ($2,077,000), vocational and special training ($2,190,000), radioisotope distribution ($500,000), environmental science ($3,677,000), and miscellaneous items ($2,035,000).

INTERNATIONAL CO-OPERATION ADMINISTRATION
($37 million)

Technical Co-operation Health Programs .....$14 million

The International Co-operation Administration through co-operatively financed programs is helping 37 countries, at their request, to improve their health and living conditions. The broad range of health projects falls into the fields of: (1) epidemic and infectious diseases (malaria, trachoma, small pox, typhoid); (2) environmental sanitation (safe water systems and sewage disposal); (3) development of rural health services and facilities (health centers, hospitals, clinics, laboratories); (4) the training of personnel both locally and in the United States; (5) the establishment and development of basic health training institutions (schools of nursing, schools of public health).

Malaria Eradication Program .....$23 million

The 85th congress in the Mutual Security Act authorized United States participation in a world-wide malaria eradication program not to exceed the amount indicated above.

DEPARTMENT OF STATE
($15,718,110)

United Nations Children's Fund ....$10 million

The United States' share of the children's fund is up about $300,000 over last year for a total of $10 million. The percentage of U. S. contribution to the total fund has dropped slightly from 57.5 per cent to 55 per cent because more nations have been contributing. Last year there were 65 contributing nations; this year there are 81. The fund is aiding 319 health and medical projects in 102 countries and territories, benefiting 52 million children and others. Last year the fund aided 3.2 million children for yaws, vaccinated 16 million against tuberculosis, and protected 28 million against malaria and other insect-borne diseases.

World Health Organization $4,200,110

This country's share of the WHO budget remains at one-third of the total of all member-nation contributions. Among the 84 countries agreeing to make contributions is Russia, which recently has become active. Last year WHO was sponsoring about 600 health projects in 94 countries and territories. WHO's overall budget is broken down this way: approximately 88 per cent for operating programs, 10 per cent for administration and salaries, and the rest for

organizational meetings. WHO actually had two appropriations by the U. S. The first is for $3,867,610 for its general activities and a second, or supplementary, appropriation of $332,500 to be used to finance the 11th world health assembly of WHO in Minneapolis, Minn.

Pan American Sanitary Bureau $1,518,000

The U. S. is contributing approximately two-thirds of the bureau's regular budget which this year totals $2.3 million. In addition, this country hopes to allocate $2 million for 1958 malaria eradication programs which will come from ICA's $23.3 million. The bureau, in existence many years before WHO was organized, is the regional office of WHO for the Americas. The bureau is sponsoring health programs in 20 Latin American countries, dependent territories of European powers in this hemisphere, and the U. S.

FEDERAL EMPLOYES HEALTH PROGRAMS

(Approx. $10 million)

Another health program, this one available to all federal civilian workers, provides limited services through health clinics. They are operated by federal agencies which employ 300 or more persons in any one area. By regulation, maximum cost of a health service cannot exceed $12 a year per employe, although special industrial conditions or minimal size units may warrant a higher ceiling. Services include treatment for on-the-job illness and physical examinations for employment.

DEPARTMENT OF LABOR

($8,069,476)

Bureau of Employes'

Compensation .....$7.5 million

An estimated 2.4 million federal workers are elegible under the Federal Employes' Compensation Act for medical and hospital care, rehabilitation services, disability and death payments, funeral and burial expenses. For treatment of employes by private doctors and hospitalization in private facilities, the labor department has set aside $5.3 million this fiscal year, and for similar services in federal hospitals and clinics, $2.2 million. Expenditures for care by non-governmental physicians and in private hospitals has been increased by $400,000 over last year's spending level.

Bureau of Labor Standards $569,476

For promotion of industrial safety, the bureau plans to spend $386,901, and for re-employment programs of the physically handicapped, $182,575. The agency develops standards for hazardous occupations, assists the states in accident prevention programs, and assists states and unions in training safety personnel.

NATIONAL SCIENCE FOUNDATION

($7.5 million)

The foundation's overall budget of $40 million is the same as last year's appropriation. The sum of $7.5 million is earmarked for research grants in the biological and medical sciences. The foundation provides support for basic scientific research, for training and education in the sciences through fellowships and programs to improve science teaching, and programs to improve exchange of scientific information.

PANAMA CANAL COMPANY & PANAMA CANAL ZONE GOVERNMENT

($5,988,300)

The estimated total of $5,988,300 available for medical and health programs in connection with the operation of the Panama Canal is divided as follows: $5,521,100 for operation of three hospitals (total bed capacity of 1,031), one leprosarium (bed capacity of 120), one medical clinic, two dental clinics, and six first aid stations (available to Zone employes and dependents, certain military and other persons); $467,200 for operating expenses of public health activities, including sanitation and health director's office. Certain patients pay toward the cost of their medical care. These payments are returned to the treasury, the total of which was not available.

DEPARTMENT OF TREASURY

($3,837,850)

The bureau of narcotics, operating within the treasury department, is primarily engaged in investigation, detection and prevention of violations of the federal narcotic and marihuana laws. Subsidiary functions are: (1) exercising control over the legitimate manufacture and distribution of narcotics within the U. S. through a quota-system and supervision over approximately 302,000 qualified registrants (physicians, pharmacists, dentists, wholesalers, etc.); and (2) training of narcotics law enforcement officers sponsored by local and state law enforcement agencies. Increased emphasis is being placed on interstate and international sources of illicit supplies.

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emotional disturbances

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Specifically, the usefulness of Dartal has been established in psychoneuroses with emotional hyperactivity, in diseases with strong psychic overtones such as ulcerative colitis, peptic ulcer and in certain frank and senile psychoses.

Usual Dosage • In psychoneuroses with anxiety and tension states *one 5 mg. tablet t.i.d.*

• In psychotic conditions *one 10 mg. tablet t.i.d.*

DISTRICT OF COLUMBIA
(Approx. $3.7 million)

Only a rough estimation can be made of the federal contribution for health and medical programs of the District of Columbia. The total district budget for all governmental functions is in the neighborhood of $200 million. Congress has appropriated $20 million for this year toward the cost of the District government or about one-tenth of the total. The District health department will expend $28,229,300. In this amount is included approximately $11 million for care of the District's insane in St. Elizabeth's Hospital. Since such sum is shown in this report under St. Elizabeth's Hospital, it is not used in computing the amount of federal contributions for the health needs of the District. The General Services Administration, an agency of the federal government, will expend $2 million this year for construction of a D. C. hospital center. This latter amount, plus 10 per cent of the total health expenditures in the District of Columbia (minus the $11 million allotted to St. Elizabeth's), totals approximately $3.7 million.

FEDERAL CIVIL DEFENSE ADMINISTRATION
($3.1 million)

Health and medical spending by FCDA was drastically curtailed for the fiscal year 1958. Out of a total of $39.3 million for civil defense, approximately $3.1 million will be made available for medical activities as compared with $49,810,000 for medical activities in fiscal year 1957. This is principally due to the fact that no funds were appropriated for additional federal medical stockpiling in fiscal 1958; whereas, $47 million was appropriated for this purpose last year. Funds for medical activities break down as follows: $1.7 million for matching funds to the states to help them maintain their medical stockpiles; $1 million for research; and $400,000 for administrative costs. Not shown in the funds for medical activities is $3.3 million appropriated for the warehousing and maintenance of the existing stockpiles.

DEPARTMENT OF JUSTICE
($1,796,000)

The figure represents the bureau of prisons' estimate of the cost of medical and dental services for over 20,000 prisoners in 28 federal penal institutions. The bulk (about $1,694,000) goes to commissioned officers of the Public Health Service assigned to the prisons and to related civil service personnel for services that include psychiatric, medical, surgical, nursing and dental treatment. Another approximately $102,000 is earmarked for fees to 220 consultants in various medical specialties.

FEDERAL TRADE COMMISSION
($1.5 million)

The commission plans to spend about the same as last year for research, testing and compliance operations in the field of food, drugs, cosmetics and devices. This is nearly 20 per cent of the agency's total budget of $5,950,000. FTC is charged by congress with the safeguarding of life and health of the public through the prevention of the dissemination of false advertisements of various products.

DEPARTMENT OF COMMERCE
($911,300)

Civil Aeronautics Administration $385,000

Spending for the CAA flight safety program is divided as follows: $225,000 for salaries and administrative expenses at headquarters; $110,000 for similar expenses in regional offices; $50,000 for the CAA medical research laboratory at Columbus, Ohio. Five medical officers in the field supervise the periodic physical examinations required in the United States and overseas. A total of 196,295 examinations were made last year and a similar number are expected to be made this year. For this service, pilots pay examining physicians directly.

National Bureau of Standards.....$526,300

The bureau of standards tests and engages in developmental research on its own initiative and at the request of others. The bureau will expend $127,900 of its own money this year as follows: $83,300 for diagnostic and therapeutic radiation research; $31,00 for audiometric calibrations research; $13,600 for dental materials research. In addition the bureau will receive $398,400 from other agencies, divided as follows: $45,400 for diagnostic and therapeutic radiation research; $125,000 for air pollution research; $48,300 for audiometric research; $5,400 for cardiovascular research and equipment development; $57,300 for anesthesiological and respiratory research; $83,000 for dental materials research; and $34,000 for metabolism process research.

CIVIL SERVICE COMMISSION
($387,000)

The commission's total budget is $18.3 million,

out of which about 2 per cent goes to the medical division for salaries of eight physicians in Washington and 11 in the regional offices. The medical division's duties include establishing and reviewing physical standards for all civilian jobs in the federal government, supervising and adjudicating disability claims for retirement, and setting professional standards of doctors and ancillary personnel to be employed in government.

PRESIDENT'S COMMITTEE FOR EMPLOYMENT OF PHYSICALLY HANDICAPPED
($182,575)

Projected spending is for salaries and administration in the development and promotion of educational programs among employers and the general public to stimulate employment of qualified physically handicapped persons. It also entails expenses in connection with the National Employ the Physically Handicapped Week.

DEPARTMENT OF INTERIOR
($154,950)

The bureau of mines, operating within the department of interior has a total appropriation of $5,585,000 for this fiscal year. Identifiable health programs and expenditures are as follows: $41,000 for a program of silicosis prevention in mines; $99,000 for studies on natural and equipment fuel gases in mines and effect of radio-activity in metal mines; $14,950 for the salary of one physician on loan from PHS who directs the medical and health aspects of the bureau's activity.

OFFICE OF DEFENSE MOBILIZATION
($77,000)

This office is responsible for policy, co-ordination and planning of the federal government's activities relating to the mobilization of health resources—health manpower, facilities, and supplies. This includes the responsibilities of the health resources advisory committee as well as of a newly established health division.

SMALL BUSINESS ADMINISTRATION
($70,000)

The small business administration provides financial assistance to hospitals, convalescent and nursing homes, medical and dental laboratories, and physicians for expenses, improvements and general operations. Small business administration loans are of two types: participation loans, those made jointly with banks and other private lending institutions; and direct loans, where no participation is available. Since all loans must be of such sound value or so secure as reasonably to assure repayments, no program losses are anticipated. SBA officials estimate that administrative expenses for the headquarters and field offices will aproximate $70,000, which is about 1 per cent of the total administrative fund available for all lending operations.

NATIONAL ADVISORY COMMITTEE TO SELECTIVE SERVICE
($19,000)

It is expected that, because of an abundance of volunteer physicians for military service, physician draft calls probably will not be made during the fiscal year. This reduces the responsibility formerly placed on the Washington headquarters of this advisory committee and on the 51 state and territorial committees. Last year congress provided $180,000 for salaries of the headquarters and state and territorial committees, but this year voted nothing. However, selective service has earmarked $19,000 from its funds to meet the salaries of a skeleton staff at headquarters (including the expenses of this national committee) and nominal expenses of the state committees. The national advisory committee has the responsibility of advising selective service on deferment policies for physicians in residencies, teaching positions, essential laboratory and clinical research and persons deemed necessary to protect civilian health at a time when draft calls are being made. The state and territorial committees assist the national committee.

OFFICE OF THE ATTENDING PHYSICIAN OF CONGRESS
($12,145)

Since 1928, the office of the attending physician of congress has provided out-patient care for members of the house and senate and their staffs. By an act of that year, the office has been filled by a medical officer of the United States Navy. Sole occupant of the post has been Rear Adm. George W. Calver (MC), U.S.N. Funds voted by congress are for medical supplies and equipment and contingent expenses. Salaries of Dr. Calver, his assisting physicians and enlisted corpsmen are paid from navy funds.

PAYMENTS TO INDIVIDUALS BECAUSE OF DISABILITY THROUGH PROGRAMS IN WHICH THE U.S. GOVERNMENT PARTICIPATES
(fiscal year ending June 30, 1958)

(not listed are small groups of beneficiaries of federal retirement

systems other than civil service retirement, such as employes of TVA, Federal Reserve banks, etc.)

Programs	Estimated Beneficiaries	Approx. Payments (Millions)
Veterans' Benefits		
A. Service-connected disabilities	2,075,000a	$1,440,000a
B. Non-service connected disabilities	734,000	700,000b
Military Retirement Disability	79,000	205,000
Federal Employes compensation	110,000	21,500
(These three programs are fully financed by general revenue of U.S. Admin. cost not shown)		
Public Assistance		
A. Aid to needy permanently and totally disabled	310,300	184,500c
B. Dependent children aid (incapacitated father segment)	633,000d	169,300d
C. Aid to the blind	109,500	78,400e
U.S. Civil Service Disability	80,000f	102,500
(Public assistance financed 55 per cent U.S. and 45 per cent states. Civil service financed 50 per cent U.S. and 50 per cent employes. Admin. cost not shown in either program.)		
Social Security - OASI Disability		
A. Disability over age 50	150,000g	175,000
B. Childhood disability benefits-h	24,000h	18,000
(These programs financed by OASI payroll tax)		
Railroad Retirement Disability		
A. Permanent disability for regular job	43,900	56,000
B. Permanent disability for all employment	54,900	63,300
C. Temporary disability	145,000	51,000
(This program financed by employers and employes. Not shown are minor admin. costs borne by U.S.)		
TOTAL	4,548,600-i	$3,264,500

a Number of persons and dollars in this program decreasing as beneficiaries die.

b This program is increasing rapidly; up $45 million since last year.

c Of this total, $98 million is provided from U.S. funds. Additional program admin. cost is about $21.7 million (12 per cent); U.S. share is $10.7 million.

d Provided to 146,00 families. $101.9 million of benefits is federal. Additional admin. cost is $19.9 million (12 per cent); U.S. share is $9.9 million.

e U.S. contribution to program is $38.4 million. Additional admin. cost is $6.6 million (8.5 per cent); U.S. share is $3 million.

f Number of persons in this program increased by 7,000 in last 12 months.

g Approx. 150,000 beneficaries are estimated at mid-year; by July 1, 1958 estimate is 200,000.

h Eligibility based on disability incurred before age 18; the 24,000 beneficiaries listed is at mid-year; by July 1, 1958 total will reach 37,000.

i No adjustment made for payments to one individual through more than one program.

MD INTERNATIONAL

A SPECIAL hour-long report on American doctors who serve in the far corners of the world — the problems they face, the satisfactions they receive, their importance in building good will for the U. S. — will be televised in compatible color at 10 p.m. (EST) Thursday, January 23, over the NBC-TV network.

Titled "MD INTERNATIONAL," this latest in the prize-winning March of Medicine TV series is the result of a 34,000-mile, around-the-world film expedition with a special mission — to show Americans how their doctors who "practice at the bedside of the world" serve not only as men of medicine, but also as unofficial U. S. ambassadors. The program was inspired by President Eisenhower's appeal for "People-to-People" activities in all professions and walks of life.

Sponsored by the American Medical Association and Smith Kline & French Laboratories, a seven-man March of Medicine crew set out early last summer to film American doctors at work in Korea, Hong Kong, Sarawak, Burma, Nepal, Lebanon, Ethiopia and India.

It took 81 days and every kind of transportation from turbojet airliners to Tibetan ponies to get this story of the devotion of American doctors abroad:

Hong Kong — Battling native superstition and prejudice, Dr. Olaf Skinsnes, a young Chicago pathologist, established an island for lepers within sight of Communist territory. His efforts have given new hope to a once-despised group.

Korea — Every day as many as 1,000 patients line up for medical treatment outside a clinic operated by the Maryknoll Sisters in the war-

ravaged city of Pusan. A handful of Maryknoll Sisters — Americans trained in U. S. medical schools — thus serve what the Army newspaper "Stars and Stripes" calls the world's longest charity line.

Borneo — For days at a time, Dr. Harold Brewster, formerly of New York, lives with and treats the Ibans, a tribe in the interior of Borneo that once practiced head-hunting. A Methodist medical missionary, Dr. Brewster works with the native government and the World Health Organization to help stamp out malaria, TB and the dysenteries.

Burma — Dr. Phillips Greene, a Harvard graduate who was Dean of Yale-in-China Medical School, teaches and practices orthopedic surgery in close collaboration with his Burmese colleagues. MD INTERNATIONAL shows Dr. Greene's rehabilitation efforts with a young Burmese who lost a leg during the war, but now can walk — thanks to this American surgeon.

Lebanon — Each year the medical faculty — including a number of Americans — at Beirut's American University graduates scores of doctors to practice throughout the Middle East. Lebanon's Foreign Minister, Charles Malik, took MD INTERNATIONAL on a tour of the medical school to explain the importance of U. S. education in this part of the world.

Nepal — MD INTERNATIONAL visited two doctors in this remote kingdom that lies between India and Tibet.

In Katmandu, capital of Nepal, Dr. Bethel Fleming, formerly of Chicago, has established a child and maternal care center with nothing more than a pocket set of instruments and permission to use an abandoned cholera hospital.

In Tansing, 6,000 feet up in the Himalayas, Dr. Carl Friedericks of Reading, Pa., practices general medicine in a village so mountainous that it has never known the wheel. Dr. Friedericks is perhaps the U. S. physician practicing furthest from home. March of Medicine followed him in his daily routine and on a horseback trek into the interior to help head off a cholera epidemic.

Ethiopia — An U. S. Government Point Four medical mission, headed by Dr. Arthur Curtis of Arkansas, plans and directs public health programs in this disease-ridden country. In a rare appearance before TV cameras, Emperor Haile Selassie tells the U. S. of his country's gratitude "for the co-operation of your doctors. . . ."

India — Vellore's famed Christian Medical College, founded by American missionaries, has a variety of medical programs in addition to its curriculum. MD INTERNATIONAL filmed a Boston thoracic surgeon, Dr. Reeve H. Betts, as he performed a Blalock-Taussing "blue baby operation" on an Indian child. Then MD INTERNATIONAL joined Dr. Victor Rambo who travels from village to village performing cataract surgery — sometimes as many as 100 a day.

More than 40,000 feet of color film were shot by the MD INTERNATIONAL crew under the direction of David Lowe, formerly executive producer of NBC'S Educational TV Project, and Scriptwriter Lou Hazam. Months of research and preparation were necessary before the crew left the U. S. So hazardous and exhausting was the film expedition that there was not one day of the trip that at least one member of the team was not ill.

March of Medicine, sponsored by the A.M.A. and Smith Kline & French Laboratories, was the first medical TV documentary series to receive an Albert Lasker Award for medical journalism. "Monganga," the story of an American missionary in the Belgian Congo, which was presented twice over NBC-TV in 1956-57, has received several awards, including a Silver Reel. MD INTERNATIONAL already is being mentioned for 1958 TV honors.

(Editor's Note — This will be presented — 8 P.M. — Tucson Inn in conjunction with the Cancer Seminar.)

RX., DX., AND DRS.

By Guillermo Osler, M.D.

O.AUERBACH of the VA hospital in New Jersey has done a terrifically detailed piece of work to show the **effect of smoking** on the **walls of the bronchi.** He subdivided the bronchial tree into about 220 standard areas, and took a section from each area. About 200 cases which had complete data on smoking habits were studied in that way. . . . The basement membrane, the cells next to the membrane, the mucosal (surface) cells, and the cilia were all compared with a "normal status." . . . The results were "anti-smoke," to say the least. The incidence of bronchial carcinoma, "carcinoma in situ," and hyperplasia were all directly related to the use of cigarets. . . . Dr. Auerbach concluded on an informal note at a recent meeting, "I'm a pathologist, not an evangelist, but I'm entitled to an opinion. Anyone who smokes is crazy."

Dr. Leroy Burney, surgeon general, sure stuck a knife into the anti-TB movement. First, he issued a communique concerning the possible RADIATION HAZARD of case-finding x-rays. Second, it was written in such a way that it could be very easily twisted for headline purposes (and was). Third, the findings he quoted don't exactly square with a current summary from the National Tuberculosis Ass'n. And finally, fourthly, he dropped the loaded item on approximately the day when Christmas Seals were put into the mail throughout the United States.

Arizona doesn't have much of a problem with **silicosis** these days. Mine workers are x-rayed; their jobs are analyzed; protective measures are in use; the old silicotics have been moved to non-dusty jobs, or are retired. . . . A peculiar type of silicosis is seen in nearby California with several places of origin in Palos Verdes (near Los Angeles), Lompoc (near Santa Barbara), etc. The cause is **diatomaceous earth,** and it has the two qualities most necessary for pathogenesis; a very fine dust and a high silica content. Some of the jobs have resulted in first stage trunk lesions in a year or two. . . . So, don't overlook the possibility in an emigrant from those areas, even if the patient is a woman. Women have worked in the "bagging room" which is as great an exposure as one can find.

HOW TO DEVELOP SYMPATHY FOR EMPHYSEMA — Find out what your own top tolerance is for altitude. Be sure to know at what level you begin to have discomfort in the chest, dyspnea, palpitation, and headache. . . . Then go up in a plane, or into the mountains, about 2,000 feet higher. Observe with objective detachment (if possible) the progress of your symptoms, plus the development of anxiety and concern. . . . You probably will feel a new appreciation of the patient with "thin lungs."

If you aren't familiar with **distemper,** perhaps you know about **measles.** The connection between the two diseases is not as incongruous as it sounds. Distemper, which afflicts young dogs, and measles, which attacks young humans, are so similar that the anti-serum of one disease will provide immunity against the other. . . . Chadwick of UCLA reported the similarity at a virology conference of the California universities. The cross-immunity has been demonstrated in tissue cultures and dogs. The two viruses have common component; they produce similar changes in certain cells; they affect the respiratory system, produce a rash, and are air-borne. Cross infection does not occur between children and puppies, however.

The MECHANISM OF INHERITANCE has become a few steps more certain in the last few years. Mendel's work pushed ahead of the animal breeders in the mid-19th century; the microscope showed us the chromosomes a bit later; logic suggested that the smaller genes were more specific than the chromosomes; and the biochemists and crystallographers took over for the more recent, non-visible steps. . . . The chromosomes are composed of chemicals which probably control the rate and growth of cells. They are confined to the nucleus, and are proteins or nucleic acids. The two main proteins are DESOXYRIBONUCLEIC ACID (DNA) and a little ribonucleic acid (RNA). . . . Both DNA and RNA are huge molecules, and are composed of long chains of alternate sugar and phosphate groups. From that point on the data become extremely complicated, with analysis of the content of certain types of cells (sperm, etc.), the relationship to ultra-violet light radiation, to x-ray diffraction, to geometry of structure, etc. . . . If this explanation has been at all erroneous we wish to apologize to Dr. L. D. Hamilton of the Upjohn "Scope" magazine.

Some women apparently would rather not have flat breasts; would arther have full or normal breasts. They would not be satisfied with the appearance of having breasts which falsies more or less produce, but would not mind an internal prosthesis. . . . "General Practice." (The medical journal of the West) publishes an article by R. A. Franklyn, M.D., on **"Augmentation Mammaplasty."** The technic consists of implanting foam plastic in the retromammary space, over the pectoral muscles. ("Surgiform," a nylon sheathed polyurethane foam sponge). . . . The use of an operation for cosmetic (and a related emotional uplift) is frankly defended. They report a series of 2,170 implants, with a 95 per cent "success rate." Infection is the only complication. Shrinkage is avoided by using the nylon sheath.

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Treatment with ULTRASOUND has grown in use so that a three-day convention has recently been held in California. On the other hand, one of the best orthopedic groups we know doesn't use the method. . . . A recent summary has listed the four primary actions of ultrasonic energy: 1. It creates thermal effects on the interfaces of tissues of different acoustic impedances. . . . 2. It produces a mechanical effect by rapidly vibrating the tissues at 1 million cycles per second. It is often called microscopic massage. . . . 3. It provides a chemical effect by increasing cell permeability and stimulation of metabolic influences. . . . 4. It produces a neurotrophic effect which indicates feeding of the nerves. . . . The actual clinical uses are roughly divided into four groups — FIRST: Diseases of the peripheral nervous systems such as neuritis and neuralgias. SECOND: Diseases of the musculoskeletal system such as spondylitis, arthritis, myalgias and Marie Strumpel disease. THIRD: Diseases of the skin such as varicose ulcers and scleroderma.

A cartoon in "Medical Economics" shows one surgeon saying to another, as he stands at the table, knife in hand, "Just ask yourself: 'What would Osler have done?'. . . . He didn't mean Guillermo Osler, but since Guillermo and the famous William were both **internists**, we can try to answer for both — We would have handed the knife to a surgeon and gotten the heck up into balcony!

It hardly seems possible that any part of the body has been ignored, or forgotten, in this day and age. The drug houses are going to keep it from happening, and Eaton's has "rediscovered the FEMALE URETHRA." Come to think of it, we haven't seen a lot written about it, and didn't know it was in trouble. . . . The Eaton research has shown its structure, with its numerous paraurethral glands. Chronic infection can occur. Pelvic symptoms may result. Furacin suppositories could relieve.

Cases of **hypogammaglobulinemia** (adult-type and "acquired") are being recognized in every large general practice, if the eye is sharp. A history of recurring infections, not responsive to usual therapy, may be the lead, though many such cases do not have the low gamma globulin level, and you can't tell one from t'other without the tests. . . . The current tests often use the simple and inexpensive turbidimetric test as a screen. If the globulin is negative, the actual weight and per cent measurement of the blood proteins must be made. (Albumin should be 54-64 per cent of the total proteins; globulin A 1 is 3-4 per cent; A 2 is 4-7 per cent; B is 9-12 per cent; and gamma globulin should be 14-25 per cent). . . . The therapy is obviously imperfect, since polio immune is used, and since in the few treated cases which have been reported the amounts which are effective in keeping the blood levels up are highly variable. One case will maintain a response for 80 days after a huge dose; another will do well with smaller doses every 1 or 2 weeks; and others respond slowly if at all. . . . Martin, Bronstein and Dray, of the National Institutes of Health (USPHS, Bethesda, Md.), report a series in the September 1957 Ann. Int. Med., and it forms a good basis for comparison.

Dr. Walter Alvarez is strongly in favor of scanning "ROUTINE ORDERS" in hospitals, operating-rooms, etc., and eliminating the ones which time and experience have found useless. . . . The obstacle to clearing the decks is the cry which goes up from people who are attached to every step in every ritual. . . . Dr. A. has tilted at quite a few of these windmills and knows the scanty chances of success.

The action of **oral insulin** (Orinase) is said to be due in large part to a release of insulin which has been produced and stored in the pancreatic beta cells. A diabetic must therefore have beta cells, and they must be functioning. . . . The basic limitations for use of Orinase are for people over 40 years of age, who have been taking less than 40 units of insulin. It also works better in cases who have not tended to have ketosis.

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Organization Page

CIVICS

Norman A. Ross, M. D.

AMA Washington Letter, Nov. 22, 1957

AMA'S REASONS FOR OPPOSING HOSPITALIZATION AT AGE 65 UNDER OASI

THE BODY of this communique refers to the Forand Bill, HR 9467, which was introduced late last season. This bill provides for 60 days hospital plus surgical benefits and an additional 60 days of nursing home care to all social security beneficiaries 65 years of age and older and the same benefits to their survivors and dependents. Legislation such as this would need be enacted to accommodate the linking of voluntary hospital plans with social security. In our report last month, we advised that the AMA is opposing legislation linking voluntary hospital plans and social security.

Dr. David E. Allman of Atlantic City, N. J., AMA president, has this to say about this section of the overall program:

"This proposal is clearly 'socialized medicine' for a segment of the American people. Enactment would permit the federal government to withdraw social security taxes on a compulsory basis from almost the entire working population and use those taxes to reimburse hospitals and physicians for services rendered to all persons eligible to receive old age and survivors benefits. The American Medical Association has repeatedly opposed compulsory health insurance and is unequivocally opposed to this new version."

Dr. Fister maintains that "the strength of the opposition to this precipitate and revolutionary proposal is great." He offers, "The AMA has supported and promoted voluntary health insurance . . ."

We note that "the life insurance and health insurance industries" are joining the AMA to oppose these laws and in their objection to these proposals. Our voluntary surgical and/or medical and hospital agencies are not listed among those joining in the objection. Is it possible that medicine is talking out of both sides of its mouth?

Will the United States of America retain its world medical leadership?

The educational number of the Journal of the American Medical Association, Nov. 16, 1957, if reviewed critically can cause one to doubt it.

We graduate about 6,800 medical students annually. We hope to increase this number and graduate 7,100 after five years. A recent proposal, this by the American Association of Medical School Educators, is to build up to 25 two-year medical schools to utilize upward of 400 vacancies in the last two, the clinical years, of medicine that can be shown to exist now.

We call your attention to Page 1388 of the above issue and to the article:

"FOREIGN INTERNS AND RESIDENTS IN THE UNITED STATES, 1956-1957
James E. McCormack, M.D.
and
Arthur Feraru, D. en D.del'U (Lyon),New York"

From this article and remembering those 6,800 American graduates, consider the effect of the following:

> "A total of 6,741 foreign physicians from 88 countries were reported as interns or residents during a seurvey of 1,242 hospitals of the United States during the year 1956-1957. Of these, 4,753 were residents, 1,988 were interns. * * * The gross totals for four successive years beginning with 1953-1954 have been 2,920; 5,036; 6,033; and 6,741. This steady increase is matched by a steady increase in the number of hospitals reporting foreign residents and interns * * *."

Does the above indicate that the American postgraduate and specialty training—medicine's source of medical educators—is becoming an export item?

How long will the United States be able to lay claim to generally the best medicine—the best educated and trained physicians?

Have you ever thought what could happen if the American public took the reports of surveys seriously?

The New York Times, Nov. 19, 1957:

BLUE CROSS RISE ARGUED IN PUBLIC

City and Labor Are Against It, Hospitals in Favor as Hearing Opens Here

GEROSA CITES SURPLUS

Medical Societies Back Plea That Extra Costs Justify 40 Per Cent Increase in Rates

by Farnsworth Fowle

"A public hearing on raising the New York Blue Cross premium rate opened yesterday before Leffert Holz, state superintendent of insurance. Affected are nearly 7 million insured members and hospitals that serve them.

The nonprofit hospitalization insurance plan, officially known as Associated Hospital Service of New York, has applied for an average increase of 40 per cent in subscription rates. Of this, 15 per cent would be for increases in hospital costs expected over the next three years.

In a 90-minute presentation, Charles Garside, president and board chairman, called increased costs of hospital service the heart of the problem. * * *"

Subscribers organized are represented.

CITY OPPOSING INCREASE

"Jerome G. Clifford, law secretary to Controller Lawrence E. Gerosa, said he spoke for more than 222,000 city employes who subscribed to Blue Cross either directly or through membership in the health insurance plan, constituting the largest bloc of subscribers. * * *

"Mr. Clifford added Mr. Gerosa's suggestion that the city be represented on the board of the Associated Hospitals Service."

LABOR ASKS VOICE

"Mr. Eisenberg said labor considered itself responsible critics of the present Blue Cross proposals and asked for a greater voice in its policy making. He asked the superintendent of insurance to bring about a larger board of directors, with 50 per cent of the total from organized labor."

These are only excerpts. I have copies of the article.

---

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		Excellent	Good	Fair	Negative	
Allergic rhinitis and vasomotor rhinitis	30	14	9	5	2	Slight Drowsiness (3)
Urticaria and angioneurotic edema	3	1	1	1		Dizzy (1)
Allergic dermatitis	2		1	1		Slight Drowsiness (1)
Bronchial asthma	1		1			
Pruritus	1		1			
Total	37	15	13	7	2	Drowsiness (5) 16.2% Dizzy (1)

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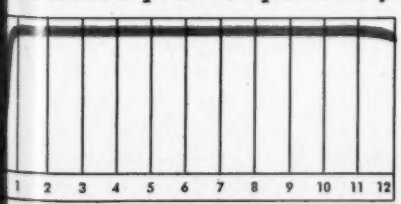

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THE TROJAN HORSE*

Socialized Medicine by way of the Veterans' Administration

LOUIS M. ORR, M.D.
Chairman, AMA Committee on Federal Medical Services
Orlando, Fla.

THOSE OF US concerned over the trend toward socialism in this country, and actively interested in stopping the spread of government control over the nation's medical services, have learned in recent years that we must be on guard against a wide variety of dangers. Some of them are obvious, outright threats, bearing all the earmarks of socialistic thinking. Others, which are more subtle and insidious, require careful study of their future effects and implications. To put it in military terms, we have learned that we must be vigilant not only against frontal assaults, but also against flank attacks and infiltration tactics.

Medicine's Counterattack

An outstanding example of the frontal assault was the attempt in 1949 to push through the Truman-Ewing plan for a system of national compulsory health insurance. The medical profession launched a vigorous campaign against that proposal, took the facts to the people, and mobilized effective, articulate support from an overwhelming majority of the American citizens.

Since the failure of the big frontal assault, there have been many examples of the flank attack. These are found in the countless so-called fringe measures that, in effect, would intrude the federal government into medical education, voluntary health insurance, medical care for the dependents of military personnel, construction of private medical facilities, and a wide range of other medical activities, all of which should be left with the states, local communities, and private groups of individuals. These "fringe" proposals, by extending federal control a bit here and there, add up to a tremendous step toward socialization.

It is not enough to be on guard only against new proposals, whether they be obvious or subtle, which would move us in the direction of socialized medicine. There is still another kind of danger that we might call a sort of mental or philosophical subversion of good intentions. This danger arises when a familiar homegrown American program suddenly takes on a new meaning, a new and dangerous significance. We look about us and realize that right here in our own back yard, without any prodding from planners and socializers, we have allowed politicians to create a Trojan horse of ominous dimensions.

New Danger

The best example of this type of danger is the hospital and medical care program of the veterans' administration. This program, with the passage of time and changing conditions in America, has been allowed to drift far from its original humanitarian purpose. Today, because we as a nation have failed to keep a tight rein on the legislative philosophy behind that program, it now constitutes the biggest single mechanism that could nudge us toward government-controlled, tax-paid medical care for the entire population.

To illustrate my point, I should like to quote two brief paragraphs from the 1955 report of the Hoover commission's task force on federal medical services. The task force said in its preface:

If only because of their increasing number, variety and magnitude, the medical services maintained by the federal government call for appraisal of their organization. But the case for critical review is cogent for another reason. Whatever inclines any one federal medical service to diverge from all others provides thereby a reason for review lest it become first a law unto itself and later beyond any control. The circumstances that favor differences and divergences are many.

These federal medical services have come into being at different times during the past 150 years: Thus each has its own history and tradition. They have had different rates of expansion. They have all changed and are still changing, in both reputed and real significance. They have different motives and serve different main purposes.

More than any other federal medical agency, the VA hospital and medical program has become "a law unto itself," a sort of sacred preserve that some people seem to feel should not even be examined or questioned by the American taxpayers who pay the bill. More than any other similar program, it already has gone beyond reasonable control. More than any other, it has changed radically "in both reputed and real significance." Therefore, let us look at the history and growth of the VA program, to see how all

*Reproduced by permission from the AMA Journal, Oct. 27, 1956

this has come about, to appraise the present, and to predict the future. The situation has reached the point where the American people must make a national policy decision affecting not only veterans, but the entire population, present and future.

Expansion of Original Program

To begin with, it should be emphasized that the original motive of the veterans' medical care program was the desire to provide care for any veteran who had become disabled in the course of service to his country. That was, and still is, a sound, humanitarian purpose and a legitimate obligation of the federal government. Over the past 33 years, however, as a result of politically motivated acts of congress, the program has been expanding primarily to provide care for a veteran with a disability that occurred after his discharge from military service and that has no relation to military duty. Emphasis has shifted from the care of service-connected conditions to the care of disabilities that do not originate in military service.

Contrary to some statements and claims, there is no historical precedent or American tradition justifying such a governmental program. The first purely medical benefits for veterans were authorized by the congress in 1917 in an amendment to the War Risk Insurance Act. The medical services and supplies provided by that legislation were limited to veterans with service-connected disabilities. The veterans' bureau, superseded by the veterans' administration in 1930, was created by an act of congress in 1921, and the following year the new agency took over a number of U. S. Public Health Service hospitals that had been caring for veteran patients.

The first authorization for the care of any kind of non-service-connected cases came in 1923. It occurred then because a reduction in the load of patients with service-connected conditions had made some beds available. As a result, the congress authorized hospital care for certain veterans of the Spanish-American war, the Philippine insurrection, and the Boxer rebellion. The veterans involved were those with neuropsychiatric or tubercular diseases, whether service-connected or not. Although this legislation affected a comparatively small number of veterans, it nevertheless soon required the construction of additional hospital facilities.

Tinge of Politics

Since then, the ball has been rolling steadily, nudged along by vote-conscious politicians. The doors were opened much wider with the passage of the World War Veterans' Act in 1924. This legislation restated the hospitalization provisions of the amended War Risk Insurance Act of 1917. It also provided liberalized hospital privileges, whenever existing government facilities were available, to a veteran of any war, military occupation, or expedition since 1897, regardless of the nature or origin of his disability. By 1926, 17 per cent of all patients in veterans' hospitals were receiving treatment for diseases or injuries not related to military service.

The doors of the veterans' hospitals were swung completely open by the act of July 2, 1926, which eliminated the 1897 date and extended the benefits of the World War Veteran's Act to the veterans of any war, military occupation, or expedition. This amendment qualified approximately 5 million veterans for lifetime medical care at public expense. The result was a huge influx of veterans into government institutions and a further acceleration in the construction of hospital facilities not needed for persons with service-connected cases.

By 1928, non-service-connected cases were accounting for 49 per cent of the admissions to veterans' hospitals, and by 1931, that figure was up to 71 per cent. In 1933, congress passed a law known as the Economy Act of 1933 that repealed all previous public laws granting hospital or medical treatment or domiciliary care to veterans who served in or after the Spanish-American war. This law and its subsequent amendments provide the basic legislative authority for the current medical program of the veterans' administration.

The most important amendment, relative to non-service-connected disabilities, came in Public Law 141 of 1934, which provided:

Any veteran of any war who was not dishonorably discharged, suffering from disability, disease or defect, who is in need of hospitalization or domiciliary care, and is unable to defray the necessary expenses therefor (including transportation to and from the veterans' administration facility) shall be furnished necessary hospitalization or domiciliary care (including transportation) in any veterans' administration facility, within the limitations existing in such facilities, irrespective of whether the disability, disease or defect was due to service. The statement under oath of the applicant on such form as may be

prescribed by the administrator of veterans' affairs shall be accepted as sufficient evidence of inability to defray necessary expenses.

By 1944, veterans' hospital construction had cost $218 million since World War I, and 80 per cent of all admissions during that time had been for treatment of non-service-connected disabilities. In that same year, Gen. Frank T. Hines, then administrator of veterans' affairs, pointed out: "The right of war veterans to hospital treatment for non-service-connected disabilities was initially founded upon the theory that there would be a certain number of vacancies in hospitals acquired and maintained for care and treatment of those having a service-connected injury or disease, and such right has always been conditioned upon available facilities."

Legislation Distorts Purpose

For more than 30 years, even in the period immediately after World War II, the VA hospitals have had more than enough beds to care for all persons with service-connected conditions. Nevertheless—and despite the legislative limitation concerning available facilities—the VA hospital system has been continually expanded. What has happened, of course, is simply a constant increase in the number of extra facilities available for non-service-connected cases. This, in effect, distorts the real intent of the basic legislation, not to mention the original purpose of the whole program.

At this point I should like to emphasize four salient facts to help bring this whole program into better perspective and sharper focus:

First, the legislation governing the present VA hospital and medical care program was enacted 22 years ago, when we had less than one-fourth as many veterans as we have today. Second, we now have more than 22 million veterans, living and aging at a time when the nation has been seriously infiltrated by the ideas of the welfare state, and by the philosophy of "let Uncle Sam do it."

Third no legal, binding, ironclad limit has ever been placed on the extent of existing VA facilities, or on the amount of money that congress can appropriate to build new facilities. And fourth, the facts and philosophy behind the VA program have never been brought clearly to the attention of the American people, who have never given a mandate for the type of operation that has developed.

Cost and Size of VA Program

What has developed? What is the present size and cost of the VA program? This is a problem in which the truth is found in the black and white figures of reports and surveys, so let us look at some of the major facts that emerge from the mass of statistics. In 1936 the VA hospitals had just under 45,000 operating beds. That was already 2,400 more beds than were needed for all persons with service-connected cases in these hospitals on Nov. 30, 1954, 18 years later. At the end of the 1940 fiscal year—and that, mind you, was almost a year and a half before Pearl Harbor—the VA was up to almost 59,000 operating beds, an increase of 14,000 over 1936. The increase alone was greater than the number of patients with non-service-connected conditions in the hospitals at that time.

By the end of the 1950 fiscal year, there were more than 106,000 operating beds, but less than 35,000 patients with service-connected conditions. By the end of the 1954 fiscal year, according to the recent Hoover commission report, the VA had 170 hospitals, not including contract hospitals, with more than 123,000 constructed beds and more than 114,000 operating beds. They had at the same time only 37,570 patients with service-connected conditions and almost 66,000 with non-service-connected conditions.

You will note that in less than 20 years there has been an increase of almost 70,000 operating beds that are not needed for patients with service-connected conditions and are used only for those with non-service-connected conditions. The VA program, as presently authorized, is scheduled to reach 174 hospitals with about 126,800 beds, at which point it is supposed to "stabilize." This myth of "stabilization," of course, is the same old story that has been handed out for the past 20 or 30 years by politicians who, in practically the next breath, start asking for more VA hospitals, more beds, and bigger appropriations.

The number of VA hospitals, beds, and patients in those beds on a given day tells only part of the story. The one-day-census method, which the VA prefers and which puts the VA program in the best possible light, proves in itself that the care of persons with non-service-connected disabilities has become the predominant part of the program.

However, when we look at the admissions and

discharges in VA hospitals in a whole year's time, we get an even clearer picture of what has happened. For example, during the 1934 fiscal year fewer than 64,00 veterans were admitted to VA hospitals and homes. In the 1951 fiscal year the VA treated and discharged over half a million veterans, 512,000 to be exact, and almost 85 per cent of them had non-service-connected general medical and surgical disabilities, as distinguished from tuberculosis and neuropsychiatric conditions.

Costs Mount

The figures supplied by the VA in June 1955, and confirmed by VA Administrator Harvey V. Higley, show that persons with non-service-connected cases accounted for over 62 per cent of the patient load on Nov. 30, 1953, and over 61 per cent on Nov. 30, 1954. VA figures also show that in the 1953 calendar year, the VA hospitals discharged over 460,000 patients, more than 83 per cent of whom had disabilities not connected with military service. Over 70 per cent of them had been treated for general medical and surgical conditions that had no relation to the time spent in military service. And what about the increase in the cost of the VA hospital and medical program? In 1934 it cost just over $37 million, while in the 1955 fiscal year it cost over $750 million. The VA budget for the 1956 fiscal year was $790 million, not including hospital construction.

I want to underline three basic facts brought out by these statistics. During the past 20 years, the number of VA hospital beds almost tripled; the number of patients treated each year has increased from seven to eight times; and the annual cost of the program has increased more than 20 times over and is fast approaching the $1 billion mark. I ask you, how big must a federal medical program get before it is considered "beyond control" and of "changing significance" and before the American people put a bridle on its size, cost, and philosophy of operation?

Many people in this country, both veterans and nonveterans, believe that the VA program already is too big, and that the time for action is now. Two groups in particular – the American Medical Association and the Hoover commission's task force on federal medical services – have made careful studies of the problem and have developed specific recommendations. Before I discuss the current trends and probable future growth of the VA program, let me outline the findings of those two groups.

AMA Policy

The policy of the American Medical Association is expressed in the committee report adopted by the AMA house of delegates in June 1953.

Your committee recommends with respect to the provision of medical care and hospitalization benefits for veterans in veterans' administration and other federal hospitals that new legislation be enacted limiting such care to the following two categories: (a) Veterans with peacetime or wartime service whose disabilities or diseases are service-incurred or aggravated; and (b) Within the limits of existing facilities to veterans with wartime service suffering from tuberculosis or psychiatric or neurological disorders of non-service-connected origin, who are unable to defray the expenses of necessary hospitalization.

Your committee recommends that the provision of medical care and hospitalization in veterans' administration hospitals for the remaining groups of veterans with non-service-connected disabilities be discontinued and that the responsibility for the care of such veterans revert to the individual and the community, where it rightfully belongs.

I cannot emphasize too strongly that there has been no change in AMA policy regarding patients with service-connected disabilities. The best possible care for these veterans is clearly a national responsibility. The AMA policy statement said on that point, "Your committee would like to stress the fact that these recommendations do not suggest any limitation or impairment of the hospitalization or medical care now available to veterans who have become physically handicapped as a result of military service. We are in complete accord with that program."

On the second point, the care of war veterans unable to pay for the treatment of non-service-connected tuberculosis or neuropsychiatric disorders, the AMA policy statement said:

The recommendation of the committee with respect to the treatment of veterans with tuberculosis and neuropsychiatric disorders of non-service origin in federal hospitals is believed necessary at this time because of the inadequacy of local facilities designed to provide treatment for all such cases. It is the feeling of the committee, however, that the entire question of

whether the care of these patients is a local or a federal responsibility must be re-analyzed by the congress. The rapidly expanding veteran population and the need for facilities for the remainder of our citizens afflicted with these diseases suggests that community facilities must be developed under state or local administration for the benefit of all. Preferential treatment for veterans with these non-service-connected disabilities cannot be continued indefinitely, in view of its detrimental effect on the health and the economy of the entire nation.

The remaining groups of non-service-connected cases, which the AMA believes should now become the responsibility of the veteran himself or his community, are the general medical and surgical conditions, whether they be chronic or nonchronic. These, if you remember, accounted for 76 per cent of all the VA hospital discharges in the 1951 fiscal year, and over 70 per cent of all the discharges in the 1953 calendar year. I can best sum up the AMA position with one more excerpt from the official policy statement:

The medical profession must concern itself, not with the number of chiselers in veterans' administration hospitals, nor with the efficacy of the veterans' administration in the administration of enabling legislation, but rather with the broad question of whether such legislation is sound, whether the federal government should continue to engage in a gigantic medical care program in competition with private medical institutions, and whether the ever-increasing cost of such a program is a proper burden to impose on the taxpayers of the country. A consideration of this problem must of course be predicated upon a concern for the health of the entire population and not just a particular segment.

Hoover Recommendations

The soundness of the AMA position was borne out by the 1955 report of the Hoover commission's task force on federal medical services. That report pointed out that of the 21 million veterans in the United States, only 3.5 million had some service-connected disability; the remaining 17.5 million had no such disabilities. The task force also estimated that the total number of veterans eligible for war-service benefits would reach a peak of about 24 million in the next three years. In a report containing many facts and figures that demonstrated the uncontrolled expansion of the VA program, the task force had this to say:

The veterans' administration needs a firm legal basis for determining the eligibility of veterans for medical care. The federal government has an obligation to care for veterans who have incurred disabilities in service. For such veterans, this obligation is of a continuing nature and requires the highest obtainable quality of medical services. But responsibility for the care of veterans with non-service-connected disabilities is not of the same order. Lifelong care should not evolve from the very normal incident of fulfilling the duties required of every citizen.

The task force recommended that "all existing rules, regulations, executive orders, and laws relating to veterans or veterans' benefits, and in particular to medical treatment and domiciliary care benefits, be consolidated and enacted into a single, all inclusive, comprehensive code." It also recommended that congress enact legislation to provide that veterans may receive "(a) hospital care for non-service-connected disabilities if medical need for such disabilities was established within three years after separation from service; and (b) outpatient care following hospitalization for those non-service-connected disabilities for which medical need was established at the time the veteran was hospitalized."

The task force estimated that the three-year time limit on establishing eligibility for the care of non-service-connected conditions would immediately reduce the federal government's responsibility from a potential of 21 million veterans to about 7 million, including 3.5 million with service-connected disabilities. The suggestion for outpatient care, if applied within the framework of the three-year time limit, would help to reduce the length of hospital stay, decrease the cost of care, and permit more efficient use of existing facilities.

Strangely enough, the Hoover commission accepted the task force recommendation on outpatient care, but it did not adopt the proposal for a three-year time limit on establishing eligibility. This, in effect, would open the doors for lifelong outpatient care of non-service-connected disabilities, and would skyrocket the costs of the VA program. It is still a mystery of logic how the parent commission, whose purpose is to save money for the taxpayers, ever arrived at such a paradoxical conclusion.

The medical task force also recommended

"that congress authorize no further construction of veterans' administration hospitals; and that the veterans' administration close and dispose by sale or otherwise any hospital which, in its judgment, can no longer be operated effectively or economically." The Hoover commission accepted those recommendations, and it also recommended that the veteran's statement of his inability to pay for hospitalization should be subject to verification. This, of course, is only a halfway measure that does not come to grips with the basic philosophy of the current legislation. Both the task force and the parent commission made additional technical reccomendations designed to tighten the administration of the VA program, improve its efficiency, and reduce its cost.

Inefficiency in VA System

There are countless examples of inefficiency, waste, and duplication in the VA hospital construction program and in the over-all operation of the VA system. As just two examples, I want to cite briefly the main facts emerging from two recent surveys in different parts of the country.

One concerns the "home town" care program that is in operation in some states. Under this type of plan, veterans with service-connected disabilities can obtain outpatient care from private physicians at federal expense. In California, according to a study by the California Physicians' Service, a monthly average of 12,000 such veterans get outpatient care from California Physicians' Service physicians, and 7,400 get it in VA clinics. Using the San Francisco-Oakland regional office VA clinic as a basis, the figures for the 1954 fiscal year show that the average monthly cost was $23.15 for the veterans treated in the VA clinic, as against only $15.40 for the veterans receiving care from California Physicians' Service physicians. The cost for each visit was $11.38 at the VA clinic, as against only $5.90 in the physicians' offices. The survey indicated that "home town" care for all California veterans with service-connected conditions could save the VA at least $688,000 every year, not to mention the saving of time and money for the patients themselves.

The second survey, by the Cincinnati branch of the National Medical Veterans' Society, concerns VA hospital construction policy in that Ohio city. According to this survey, two VA hospitals already serving the Cincinnati area have 632 beds authorized for general medical and surgical cases, but not in use. Even excluding these, there is no shortage of general beds in the area. However, the VA does have an acute need for more neuropsychiatric beds in that area, and Cincinnati could staff such a hospital. Yet the VA is determined to open the Cincinnati VA hospital as a general medical and surgical facility, which will not meet the actual needs of the veterans, and will aggravate health personnel shortages already existing in the area.

Regardless of all the statistics indicating waste and extravagance, these are only symptoms of the underlying trouble. The real question involves the basic legislative philosophy behind the program. The VA has to administer its hospital and medical program in accordance with existing laws and the financial directives of congress. And regardless of whether one agrees specifically with the policy of the American Medical Association, or the recommendations of the Hoover commission or its medical task force, the fact remains that there is mounting concern in this country over the implications of the VA program. That concern is predicated not only upon the gigantic size of the present program, but also upon current trends pointing to even greater future growth.

More Expansion Possible

One of the most important single factors is the aging of our veteran population. By 1970 — only 12 years from now — the VA estimates more than 86 per cent of the living veterans discharged before June 1950, will be 45 years of age or older, as compared with a fraction under 23 per cent in 1952. In actual numbers there will be almost 14 million at or beyond age 45, more than three times as many as there were in 1952.

At the same time, almost 13 per cent of these pre-Korean war veterans will be age 65 or over, as compared with only 3 per cent of all veterans in fiscal year 1955. That is, there will be over 2 million veterans at or beyond age 65, more than 10 times the number in 1952 and three times the number of all over-65 veterans in June 1955. Past experience of the federal government shows that as veterans grow older, and more vulnerable to chronic ailments, there is a constant increase in the total patient load of VA hospitals, in the proportion of non-service-connected cases, and in the average length of hospital stay. Unless we change our national policy, these factors will produce a tremendous

future rise in the size and cost of the VA program.

Such an expansion was predicted in 1945, five years before the Korean conflict, by Gen. Frank T. Hines, then administrator of veterans' affairs: "With the numbers involved in this war and with the needs clause retained in the legislation, a peak load requirement of some 400,000 beds by 1975 would seem a fair estimate. With the needs clause removed, the number would be measurably increased to the extent that free hospitalization would be afforded by the government for approximately one-third of the adult citizens of the country, which in turn might involve a recurring annual expenditure for such an item alone of approximately $1 billion."

More recently, in 1952, the VA department of medicine and surgery prepared a report for the Booz, Allen & Hamilton Company, which was making a management survey of the agency. In that report the VA itself estimated that, if present trends and admission policies continue, the VA by 1975 will need 265,960 hospital beds and 78,500 domiciliary beds to support the anticipated patient load. That is a total of almost 350,000 beds.

Additional Dangerous Trends

In addition to the size and aging of our veteran population, other trends and influences are affecting, or can affect, the future expansion of the VA program. One of these, which was officially condemned by the AMA house of delegates in June 1954, is the practice of establishing a "presumption" of service connection for veterans' disabilities by means of legislative action rather than by scientific medical examination. Under this practice, a condition is presumed to be service-connected if it occurs within a certain length of time after discharge from service; about 30 specific disabilities have already been included. At every recent session of congress, many such bills have been introduced, and more and more of them became law. This, in effect, is simply an indirect method of increasing the VA load of non-service-connected cases. The end-result of this dangerous trend could well be for congress to declare all veterans' ailments service-connected and therefore eligible for complete care with no questions asked.

We can reasonably expect in view of past experience that there will be continuing political efforts to broaden the benefits and loosen the eligibility requirements for veterans themselves. We also can expect politically motivated attempts to extend the VA hospital and medical care program to persons other than veterans. In fact, bills already have been introduced in congress, to provide such care for the dependents of veterans, and that would mean additional millions of government beneficiaries. We can expect, if the nation adopts a program of universal military training, that there will be inevitable political pressures to extend VA benefits to those who have completed such training. And, of course, if we have any more "small" wars like Korea, or if we should be so unfortunate as to have another global conflict, then our veteran population will again increase rapidly, and the entire problem will be compounded many times over.

Future Course

When and where does the growth stop? When and where are the various trends checked? In my opinion, the time is now, and the job must be done in the halls of congress, under the impetus of American public opinion.

The Hoover commission pointed out that the federal government already has undertaken responsibility for all or part of the medical care of about 30 million people. From the standpoint of potential beneficiaries, the VA medical program is by far the largest in the federal government, with 21 million beneficiaries now, and an estimated 24 million within the next three years. From the standpoint of cost, the VA medical program is second only to that of the defense department, and its budget is approaching a figure of $1 billion a year.

Through the VA program, we already have socialized, tax-paid, government-controlled medicine for one-eighth of our population. All they have to do is apply for it and claim that they are unable to pay for their own care. But what one section of the population gets from the federal government, the rest are likely to want in the near future, and there always will be plenty of vote-conscious politicians around to demand it for them.

So what is the next step? Government hospital and medical care for the dependents of veterans? — for industrial workers? — for white-collar workers? — for farmers — for old people? — for everyone with an income under $5,000 a

year? – for the entire population? Where does it stop? Remember that in several countries, Germany and Great Britain for example, government medicine started out covering limited segments of the population, and ended up as full-fledged socialized medicine for all.

Through the VA program, we are rapidly creating two classes of citizens with respect to hospital and medical care; those who once wore a uniform and those who did not. If we wait too long, and if we choose the wrong way to correct that unfair discrimination, we will be led down all kinds of socialistic byways. Through the VA program and its ever-mounting costs, we are constantly increasing the tax burden on all citizens, including veterans themselves. We can be taxed into socialism as well as legislated into it. Through the VA program, we are siphoning off personnel and facilities needed to develop adequate health facilities for all the American people, including the veterans and their families in their home communities. If this trend is allowed to continue, our private system of medicine will suffer increasingly severe shortages, and the pressures will mount for complete government control over all personnel and services, to solve all problems and to simplify the entire system.

We, and I mean all of the American people, must decide soon, before it is too late, what is to be the future course of the VA hospital and medical care program. That decision will determine whether we protect and improve our private system of health care for all people, or whether we eventually reach socialized medicine by default.

THE COMPLETE PEDIATRICIAN: Practical, Diagnostic, Therapeutic and Preventive Pediatrics
by **Wilburt C. Davison, M.D.**, and **Jeana Davison Levinthal, M.D.** 7th ed. 272 pages. (1957) Duke University. $4.25.

This is indeed a *vade mecum* for general practitioners and pediatricians. The amount of information condensed in this small volume is astonishing. A special organization is used to achieve such compactness; each page carries the admonition, "To understand this book, read the Preface and Instructions and consult the Index."

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AMA'S REASONS FOR OPPOSING HOSPITALIZATION AT AGE 65 UNDER OASI

ANNOUNCING that it will "strongly oppose" the Forand Bill for hospitalization and medical benefits under social security, the American Medical Association has explained its reasons. The Forand Bill is HR 9467, introduced late last session. It offers 60 days of hospitalization, plus surgical benefits, and an additional 60 days of nursing home care, to all social security beneficiaries 65 years of age and older, and the same benefits to their survivors and dependents. Says Dr. David E. Allman of Atlantic City, N. J., AMA president:

"This proposal is clearly 'socialized medicine' for a segment of the American people. Enactment would permit the federal government to withdraw social security taxes on a compulsory basis from almost the entire working population and use those taxes to reimburse hospitals and physicians for services rendered to all persons eligible to receive old age and survivors' benefits. The American Medical Association has repeatedly opposed compulsory health insurance and is unequivocally opposed to this new version."

A task force of the board of trustees now is making an intensive research study of the health status of the population 65 years of age and over. Heading this special group is Dr. George M. Fister of Ogden, Utah, under whose direction Walter Polner, Ph.D., has been assigned to gather information on the extent of the problem, economic resources of those affected, contributions from public assistance, relationship of the aged persons to others in the family group, incidence of hospitalization, and illness by age groups, and growth within the last 10 years of voluntary health insurance for the aged.

Answers obtained to these questions will be the basis of AMA's testimony when the bill comes up in congress this year, and of the association's educational efforts in behalf of the public.

Solution to the problem, Dr. Fister maintains, is not a compulsory federal program, but the extension to older persons of voluntary health insurance, which has such a remarkable record of service. Comments Dr. Fister:

"The AMA has supported and promoted voluntary health insurance and other voluntary measures designed to promote individual and family economic security and responsibility. Progress in this direction has been phenomenal. Let's not take hasty action. . . . This picture is too complex. What we must do is study the problem carefully. Government intervention would be fatal."

Dr. Fister noted that "the strength of the opposition to this precipitate and revolutionary proposal is great." He said that allied with the AMA were the American Farm Bureau Federation, the National Retailers' Federation, the U. S. Chamber of Commerce, life and health insurance industries, the National Association of Manufacturers and "innumerable other organizations and individual citizens who are opposed to government intervention into medical and other private affairs."

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what are the differences among tranquilizers ?

Reviews of ataraxic therapy commonly divide the available tranquilizers into three main categories: the rauwolfia derivatives; the phenothiazine compounds; and a smaller group of agents which are lumped together for the sake of convenience rather than because of any common characteristic.

As a result, one significant fact is often overlooked: ATARAX (hydroxyzine) does not fit into any of these three categories. Indeed, by any logical criterion, it belongs in a class by itself.

1. ATARAX is chemically unique. It differs from any other tranquilizer now available, not in minor molecular rearrangements but in basic structure.

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In reviewing your own experience with tranquilizers, remember that ATARAX is in a class by itself; that you cannot judge it by your results with any other drug. To get to know ATARAX at first hand, prescribe it for the next four weeks whenever a tranquilizer is indicated. See for yourself how it compares.

*Documentation on request

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Dec. 1, 1957 Progress Report of the Poisoning Control Information Center at the University of Arizona College of Pharmacy

IN THE Tucson area during the month of November, the faculty of the College of Pharmacy presented 24 talks to the PTA and to civic and service organizations, as a part of the Poisoning Control Information Center's adult education program for the prevention of poisonings.

The necessity of an adult education program for the prevention of poisonings can be shown by just one of the 59 poisoning case reports received by the Poisoning Control Information Center since the Nov. 1, 1957 progress report. This one poisoning, which ended fatally, involved the ingestion of a drain pipe cleaner by a 13-month-old boy.

In view of the seriousness of poisonings due to drain pipe cleaners and other strong alkalies, the Poisoning Control Information Center recommends the following treatment:

1. Immediately dilute the ingested poison by drinking large amounts of water, milk, orange juice, lemon juice, or dilute vinegar. Wash all contaminated skin and accessible mucous membranes with water.

2. Gastric lavage and emetics are contraindicated because of the danger of gastric or esophageal perforation.

3. Have the patient swallow demulcents such as olive oil or egg white, and also apply demulcents to denuded areas.

4. Administer analgesics – demerol, 50 to 100 mg. IM.

5. Treat shock by IV administration of electrolyte solutions, plasma, or whole blood.

6. Surgical intervention may be indicated in case of severe laryngeal or gastric perforation. If asphyxia occurs, a tracheotomy may be necessary.

7. Liquids and soft foods may be given as tolerated, but in most instances the parenteral administration of fluids and carbohydrates is necessary for the first week.

8. Early, careful esophageal dilatations may prevent or eventually remedy strictures. Cortisone therapy may help to minimize stricture formation.

9. Broad spectrum antibiotics as a prophylaxis against secondary infections.

Statistics of 59 poison cases received since the Nov. 1, 1957, progress report.

Age

84.8 per cent under 5 years
1.7 per cent 5 to 15 years
6.7 per cent 16 to 30 years
3.4 per cent 31 to 45 years
1.7 per cent over 45 years

Nature of Incident

96.6 per cent accidental
3.4 per cent intentional

Outcome

98.3 per cent recovered
1.7 per cent died

Time of Day

32.2 per cent between 6 a.m. and noon
37.4 per cent noon and 6 p.m.
15.2 per cent 6 p.m. and midnight
13.5 per cent unknown

Causative Agents

30.5 per cent aspirin preparations
10.2 per cent hypnotics and sedatives
6.7 per cent sympatholytic agents
5.1 per cent tranquilizers and solvents (each)
3.4 per cent cough syrups, unknown prescriptions, antispasmodics, household bleaches, and pesticides (each)
1.7 per cent toothpastes, stick deodorants, nail polishes, hormones, furniture polishes, floor waxes, bird of paradise seeds, "Christmas snow," boric acid, oleander leaves, household ammonias, alcohol, and nasal decongestants (each)

HUMAN BLOOD COAGULATION
by Rosemary Biggs and R. B. Macfarlane. 2nd. ed. 476 pages. Illustrated. (1957) Thomas. $8.50.

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NEW U.S. EMPHASIS ON SCIENCE TO AFFECT MEDICAL PROGRAMS

WITH THE U. S. just getting started on its "big push" to catch up with Russia's scientists, there is only fragmentary information in Washington as to how the medical profession and federal medical programs are to be affected by the major shift in emphasis. However, medicine will be involved in two aspects:

1. The increases in appropriations for scientific programs related to defense will result in, as President Eisenhower says, "cutting out or deferring entire categories of (not absolutely essential) activities, . . . one of the hardest and most distasteful tasks that the coming session of congress will face." Clearly federal medical programs "not absolutely essential" will be under close scrutiny.

2. The long-range drive to improve quality and quantity of scientific knowledge will be centered around defense-essential areas, particularly chemistry, physics and mathematics. However, if any broad program of scholarships eventually is offered, medical studies won't be ignored.

The understanding is that the big new defense appropriations largely will flow through the defense department and such organizations as the National Science Foundation, but that medical research at the National Institutes of Health will not be allowed to suffer. Recommendations of the Bayne-Jones committee, now studying U. S. medical research programs, could be of major significance to NIH.

SUPREME COURT TAKING UP FTC CASES ON HEALTH INSURANCE

THE QUESTION of whether Federal Trade Commission authority over accident and health insurance companies is limited to states that don't have adequate laws against false advertising, will be coming up in the supreme court this year. The tribunal agreed on Oct. 12 to review two circuit court decisions in this field. Because of the crowded court calendar, they probably won't come up for consideration until March or later.

FTC told the court that lack of federal regulation creates a legal vacuum, "a no-man's land which is not effectively regulated either by the states or the federal government." The litigation is an outcome of 41 complaints issued by FTC charging certain insurance companies with deceiving the public through false advertising of accident and health insurance policy terms and benefits. Citing a 1945 law, the circuit courts held in two cases that congress intended the business of insurance should be regulated by the states, and that where states had undertaken such regulation, the federal anti-trust laws and FTC act would not be applicable.

SENATE COMMITTEE MAY INCLUDE JENKINS-KEOGH IN OMNIBUS BILL

THE Jenkins-Keogh plan for tax deferment on retirement funds paid by the self-employed may be made a part of an omnibus tax relief bill for small business. The idea is under consideration by a tax subcommittee of the senate small business committee which is continuing regional hearings on general tax problems for the small business man and the self-employed. It is planned to have a committee bill reported out and ready for floor action by late January.

While tax measures are supposed to originate in the house, the omnibus bill under study could be attached as an amendment to any house-passed tax bill that comes to the senate. After passage by the senate, it would go to conference if the house asked for such conference. No further hearings would be required under the procedure. However, by then, the house ways and means committee would have covered the ground in its general tax hearings which opened Jan. 7 and will run through Feb. 7.

The American Thrift Assembly is pushing for enactment of Jenkins-Keogh legislation in the interest of 10 million self-employed. Unlike employes of corporations and associations, they cannot set aside retirement funds with a deferment of taxes.

PHS ADVISES AGAINST COMMUNITY-WIDE TB X-RAY CAMPAIGNS

PUBLIC Health Service, acting on advice of a committtee of medical and public health leaders called in to re-evaluate recent changes in the nature of the tuberculosis problem, is recommending against community-wide chest X-ray campaigns for detection of TB. Instead PHS recommends that communities use tuberculin skin testing as a first step in case-finding, followed up with X-ray examinations for those with positive reactions.

The service suggests that X-ray examinations be continued on selective groups, those with greatest risk, such as persons confined to hospitals and other institutions, low-income groups, migrant workers and people known to have been exposed to the disease. It was emphasized that groups to be given X-rays should be selected locally, with the choice based on the local tuberculosis problem, the expected yield of new cases and the adequacy of diagnostic and treatment facilities and of follow-up services.

One factor given consideration in reaching the decision, PHS says, is "the problem of low-level radiation exposure from X-rays." To further reduce radiation exposure, both of the operators and the public, PHS urges periodic inspection of all X-ray equipment, and installation of further protective devices where indicated.

Of the new tuberculosis picture, PHS says: "In the last 15 years . . . the tuberculosis problem has changed radically. Some areas of the country are now practically free of active cases of the disease. In other areas, tuberculosis continues to be a serious problem, particularly among certain groups. While the number of active cases has declined almost 30 per cent in the last five years, it is estimated that there are still about 250,000 persons with active tuberculosis in the United States today."

The committee that advised PHS to make the recommendations was composed of : Drs. Russell H. Morgan, chief radiologist, Johns Hopkins University Hospital, and special consultant to the surgeon general on the public health aspects of radiation; Ralph Dwork, director of health, Ohio State Department of Health; Floyd Feldman, medical director, National Tuberculosis Association; Joseph Stocklen, tuberculosis control officer, Cleveland and Cuyahoga County Health Department.

U. S. TREASURY DEPARTMENT

International Revenue Service

THE INTERNAL Revenue Service has announced that it is modifying its position with respect to classification for federal income tax purposes of organized groups of doctors practicing medicine.

In Rev. Rul. 56-23, C.B. 1956-1, it was held that a group of doctors who adopt the form of an association in order to obtain the benefits of corporate status for purposes of section 401(a) of the Internal Revenue Code of 1954 is in substance a partnership for all purposes of the Internal Revenue Code.

It is now the position of the service that the fact that an association establishes a pension plan under section 401(a) of the Internal Revenue Code of 1954 corresponding to section 165(a) of the 1939 code is not determinative of whether such organization will be classified as a partnership or an association taxable as a corporation. The usual tests will be applied in determining whether a particular organization of doctors or other professional groups has more of the criteria of a corporation than a partnership.

Basic criteria to be used in testing the existence of an association taxable as a corporation will be stated in a revenue ruling to be published at a later date.

PREMIUMS PAID BY PHYSICIAN ON DISABILITY INSURANCE HELD NONDEDUCTIBLE PERSONAL EXPENSES

Marvin J. Blaess, 28 *T.C. No.* 78, 6-25-57, *reviewed.**

THE REVENUE service ruled in 1955 that where a taxpayer purchases a professional overhead expense disability policy which would reimburse him for certain overhead expenses incurred during prolonged periods of disability due to injury or sickness, any premiums paid on such policy are deductible as business expenses and any benefits received are taxable income.(1) The special tax status of the policy involved in that ruling must be distinguished from the tax status of a typical disability policy maintained by a taxpayer – as this case holds.

The taxpayer was a practicing physician. During the taxable year in issue, 1951, he paid some $440 of premiums on three disability policies

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and deducted the amount on his income tax return filed jointly with his wife. Each policy provided payments of $200 a month during a period of disability requiring the attendance of a doctor, and provided certain other benefits usually found in personal disability policies. None of the policies contained any restriction on the use to which policy benefits could be put. Thus he was not required to use them for the payment of office expenses, which amounted to approximately $800 a month.

Following the commissioner's determination that the premiums were not deductible, the taxpayer petitioned the matter to the tax court. There he contended alternatively that the premiums were deductible as ordinary and necessary business expenses under a 1939 code, section 23(a) (1), or under section 23(a)(2) as ordinary and necessary expenses paid for the conservation or maintenance of property held for the production of income.(2) The taxpayer relied on revenue ruling 55-264, previously noted, arguing that it should apply since he intended to use any policy benefits to pay his office expenses.

The tax court held that the disability insurance premiums were personal expenses, deduction of which was prohibited by the 1939 code, section 24(a)(1),(3) rather than expenses deductible under either section 23 (a)(1) or 23(a)(2).

Before taking up the specific issues, the tax court emphasized that income tax deductions do not turn on equitable considerations, but upon legislative grace expressed in the form of clear provisions for their allowance.

In taking up the issue of deductibility under section 23(a)(1) as a business expense, the court stated that the expenditure must proximately result from the trade or business conducted by the taxpayer and must be ordinary as well as necessary in the carrying on of the trade or business. From this, the court concluded that the procurement and maintenance of disability insurance contracts did not proximately result from the operation of the taxpayer's business. The taxpayer's declared intention to apply any payments received to discharge his office expenses was immaterial; his intent could not bring the expenditure within the statutory provisions.

A footnote to the opinion distinguished the payments of premiums on life insurance policies by a business creditor, holding the policies as collateral, in the hope that the indebtedness might be fully recovered(4).

The court next took up the taxpayer's alternative contention that the premiums were deductible under section 23(a)(2) as nonbusiness expenses paid for the conservation of property held for the production of income. It agreed that a medical practice was property held for the production of income. However, it quoted a supreme court opinion to the effect that this statutory provision was applicable to expenses on the basis of the remote contribution they might make to the conservation of a taxpayer's income-producing assets.(5) It concluded that the taxpayer's payments of disability insurance premiums were not for the immediate purpose of conserving his medical practice, nor for the immediate production or collection of income. Furthermore, the indemnity payments were not by terms of the policies made for the payment of expenses of maintaining or conserving the taxpayer's medical practice, but were to compensate for his loss of earnings. As he was free to use any indemnity payments for any purpose, his present intention to use them to discharge office expenses could not bring the premiums within the statutory provision.

Although the court did not feel obligated to do so, it went on to hold that since the insured was free to use any indemnity payments for his living expenses, or personal expenses, or the expenses of his family, the premiums were personal expenses and nondeductible under section 24(a)(1).

Comment I: Although the taxpayer did not succeed in deducting his disability insurance premiums, he can take comfort from the fact that any indemnity payments collected by him will be excluded from his gross income under the provisions of section 104(a)(3). As already pointed out, indemnity payments received under a professional overhead disability policy would constitute taxable income.

Comment II: Probably the taxpayer could not deduct any part of the premiums on the disability policies here involved as an itemized deduction for medical expense. Although Section 213 allows a deduction for the expenses paid for medical care, and defines medical care to include amounts paid for accident and health insurance, the Revenue Service has ruled that only premiums paid on insurance which provides reimbursement for medical expenses are

deductible; premiums on insurance which provide reimbursement for loss of earnings are not deductible."

1. Revenue ruling 55-264, 1955-1 C.B. 11. This ruling was reprinted at page 48 1955 Current Comment, and is cited at page 19-46 of Service.

2. These sections are the predecessors to the 1954 Code sections 162(a) and 212.

3. Predecessor to the 1954 code, section 262.

4. The footnote cited Dominion National Bank, 26 B.T.A. 421, and Commissioner v. Charlestown National Bank, 213 F. (2d) 45, which are cited at pages 18-5, 18-6 and 19-46 of your Service.

5. The case quoted from was Lykes v. U. S., 343 U.S. 118.

WOMEN'S CLUBS COMPETE IN CANCER EDUCATION CONTEST

BEGINNING Oct. 1, 1957 and running for a full year, the Arizona Federation of Women's Clubs are competing in a cancer education contest sponsored by the Association of Arizona Insurance Companies in co-operation with the Arizona division of the American Cancer Society.

A portion of the contest involves club members obtaining an examination for "cancer detection." For this, each member is furnished a form to present to her physician. The physician is requested to keep the form in his office, detaching only the certificate for the club member to turn into her club chairman for the contest. The certificates state nothing concerning the patient's examination other than the patient has had an examination. All such certificates are to be destroyed at the conclusion of the contest. The portion of the form retained by the physician is largely a history form which is printed primarily to save the physician's time, and give him leads as to the necessity of further questioning.

There will be a prize of $250 to whichever one of five districts reports the best club participation with the most effective programs. In addition, there will be several prizes of $100 each to the best individual club projects.

Mrs. Lucille Sutter, president of Arizona Federation of Women's Clubs noted this to be a splendid opportunity for an education program in the various clubs and communities to help fight cancer. Mr. A. W. McLeod, president of the Association of Arizona Insurance Companies states that it was a privilege for the various insurance companies to co-operate in this life saving effort. The American Cancer Society is co-operating in the program planning and is furnishing all of the contest material.

This contest, backed by the strongest women's organization in this state, will do much to aid the cancer education program.

AMERICAN CANCER SOCIETY

THE AMERICAN Cancer Society reported that six women, dying of widespread breast cancer, have been treated experimentally with a powerful cancer-causing chemical, 3-methyl-cholanthrene or MC, by scientists at the Ben May Laboratory for Cancer Research, University of Chicago.

One patient received no benefit from the treatment. In four others, the cancers were arrested temporarily, and cancer colonies in the lymph nodes, skin, bone, lungs and brain shrank up. The sixth was without symptoms of cancer and doing her housework nine months after being treated with MC.

The treatments were given by Dr. Charles Huggins (the first to treat prostatic cancer successfully by removing the testes and administering female hormones, and breast cancer by removing the adrenal glands) and Dr. Jack D. McCarthy. Dr. Huggins's research is supported by the American Cancer Society and its Illinois division, the Jane Coffin Childs Memorial Fund, the U. S. Public Health Service, and the Damon Runyon Fund.

MC, universally used to induce cancer in laboratory animals, was employed in these cases because the patients were beyond help by conventional means. All had undergone radical surgery, and five had had their ovaries and adrenals removed in earlier unsuccessful attempts to halt the disease.

It is a paradox that almost every chemical used to treat cancer will itself cause the disease in animals. X-rays, which frequently cure cancer in humans, are powerful cancer causers when given in excessive amounts. Scientists elsewhere had found that MC and related chemicals sometimes slowed down or stopped the growth of certain transplanted cancers in animals; and a few have reported retarding skin cancer and leukemia in man with chemicals akin to MC.

Drs. Huggins and McCarthy first tried MC on rats with tumors whose growth is stimulated with female hormone. They found that in the

treated animals, maintained on a high protein diet, cancers developed very slowly – the MC suppressed the pituitary secretion, gonadotrophin, which stimulates the production of female sex hormones, and it also acted directly against the cancers themselves. They then decided to administer MC intramuscularly to the six pain-racked patients who were riddled with cancer.

The best response was observed in a 48-year-old woman whose right breast and nearby tissues were removed surgically in July 1955. Five months after surgery, her cancer had recurred in one lung, the sac encasing the lungs, and the surgical scar. Armpit lymph depots had been transformed into cancerous tissue.

Removal of the ovaries and adrenals in August 1956 failed to stop the cancer; and on March 4, 1957, the patient – by then without appetite, breathing with great difficulty because the lung sac had filled with fluid and the lung itself contained a large cancer mass – was given MC shots intramuscularly. Daily injections continued until April 8.

By April 2, cancerous lumps on the skin had shrunk, lymph nodes had begun to decrease in size, and with the ebbing of fluid from the lungs, breathing had become easy once again. By the end of April, nests of cancer could still be found in various tissue samples examined under the microscope by Dr. Eleanor M. Humphreys, pathologist, but these were in a degenerating condition.

In October, when the scientists finished writing their paper for the journal, Cancer Research, the patient once more was strong and doing her housework; and, so far as they could find by x-ray and microscopic examination, no cancer was present.

All patients were observed carefully, during and after treatment, for possible ill effects of the drug. All patients had a decrease of hemoglobin and blood proteins and showed a temporary anemia, but these conditions improved after treatment was completed. Aside from this, and mild nausea, vomiting and occasional diarrhea – all of which were transient – no bad results were observed.

Whether MC can cause cancer in humans is unknown. While it is a potent cancer inducer in lower animals, it failed to bring on the disease when it and female hormones were given to monkeys for eight to 10 years.

None of the patients developed new cancers – a hopeful sign that MC, in the dosages employed, may not cause cancer in humans. Drs. Huggins and McCarthy continue to regard MC as a potentially dangerous drug, however; and at this stage they feel it should be used only in certain cancer patients when all other measures have failed.

MC is not considered a cancer cure, despite its dramatic effects in one of the five patients who were helped. Two of the six patients have died of their disease; and the rest have been helped, so far, from three to 10 months only.

As a research tool, however, MC is useful. The scientists are studying the metabolic mechanisms involved in the remissions the drug has wrought in an effort to find ways of improving MC's effectiveness. And for some patients beyond help by other means, it has alleviated suffering, retarded or stopped cancer growth for a while, and restored them to a more comfortable and useful life.

TO SMOKE OR NOT TO SMOKE

THE American Cancer Society distributed 200,000 copies of a leaflet entitled "To Smoke or Not to Smoke?" Distribution has been made through the society's 60 divisions and more than 3,000 units throughout the country.

The leaflet points up the evidence linking lung cancer and cigarets. It cites several studies, including the society's Hammond-Horn four-year study of 187,783 men between the ages of 50 and 70 which revealed:

"Lung cancer death rates are 10 times higher among those with a history of regular cigaret smoking than among those who have never smoked. Among two-pack-a-day smokers the rate is more than 60 times higher.

"Those who have given up smoking have a lower risk of death: Those once smoking a pack or more a day, who have given up smoking for at least one year, have a death rate less than half of those who have continued to smoke.

"Over-all death rates from a number of causes – and particularly cancer and coronary heart disease – rise with the number of cigarets smoked. The death rate is 123 per cent higher in those who smoked two packs of cigarets a day than in those who do not smoke."

The pamphlet also states: "It is estimated that

a man who smokes two packs of cigarets a day has about one chance in 10 of developing lung cancer, while a non-smoker has only about one chance in 270 of having this disease. In addition to those ratios, the American Cancer Society's study also indicates that death rates from several other sites of cancer and from coronary heart disease were far higher among cigaret smokers than non-smokers. Among men in the American Cancer Society's study, heavy cigaret smokers had about the same death rate as non-smokers who were seven or eight years older."

The leaflet concludes: "No one can predict what will happen to an individual, but, in general, those who smoke less are those who live longer.

"To smoke or not to smoke is a personal decision. This pamphlet was prepared to give you the information available as of today."

Referring to public health measures, the leaflet says: "As this pamphlet was being printed, the board of directors of the American Cancer Society met and discussed the problem of smoking and cancer. Because of the evidence that cigaret smoking is a causative factor in lung cancer, the society is urging state and federal public health services to proceed with such public health measures as present knowledge indicates are needed for the protection of the people. As indicated earlier, the question whether to smoke or not, is an individual and personal decision for you and your children."

EDUCATIONAL COUNCIL FOR FOREIGN MEDICAL GRADUATES

AFTER almost three years of planning the Educational Council for Foreign Medical Graduates opened its doors on Oct. 1, 1957 at 1710 Orrington Avenue, Evanston, Ill.

What Functions Will It Serve?

It will distribute to foreign medical graduates around the world authentic information regarding the opportunities, difficulties and pitfalls involved in coming to the U. S. on an exchange student visa in order to take training as an intern or resident in a U. S. hospital, or coming on an immigrant visa with the hope of becoming licensed to practice.

It will make available to properly qualified foreign medical graduates while still in their own country a means of obtaining ECFMG certification (a) to the effect that their educational credentials have been checked and found meeting minimal standards (18 years of formal education, including at least four years in a bona fide medical school), (b) that the command of English has been tested and found adequate for assuming an internship in an American hospital, (c) that the general knowledge of medicine as evidenced by passing of the American Medical Qualification Examination is adequate for assuming an internship in an American hospital.

It will provide hospitals, state licensing boards, and specialty boards which the foreign medical graduate designates, the results of the three-way screening available.

What Functions Will It Not Serve?

It will not serve as a placement agency either for interns or residents. Placement arrangements must be made by the foreign medical graduate directly with the hospital of his choice.

It will not attempt to evaluate the teaching program or inspect or approve any foreign medical school. Its program is based not upon evaluating the school from which the candidate graduated, but upon evaluating the professional competence of the individual.

It will not act as an intercessor for foreign medical graduates having problems under discussion by state boards of medical licensure or specialty boards. If the foreign medical graduate asks that the results of his three-way screening be sent to a designated board, this will be done, but the ECFMG has no right and no desire to review the decisions of the properly constituted state licensing boards and American specialty boards.

Who Is Sponsoring the ECFMG?

Sponsors of the new agency are the American Hospital Association, the American Medical Association, the Association of American Medical Colleges and the Federation of State Medical Boards of the United States. Providing funds to support it through the first two years of its existence are the sponsoring agencies and the Kellogg Foundation, and the Rockefeller Foundation.

The ECFMG has been legally incorporated in the State of Illinois and is operating in the first year of its provisional approval as a tax exempt organization under Section 501 (c)(3) of the

Internal Revenue Code of 1954. The 10-member board of trustees includes two representatives from each of the four sponsoring agencies and the two representing the public at large (one named by the department of defense, the other by the department of health, education and welfare). The president of the board of trustees is Dr. J. Murray Kinsman, Dean of the University of Louisville School of Medicine. The executive director is Dr. Dean F. Smiley, former secretary of the Association of American Medical Colleges.

What Are the Mechanics of the Examination?

The ECFMG's examination committee will select the items for two examinations a year from the National Board of Medical Examiners' pool of questions. The National Board of Medical Examiners will use as many of its 50 presently constituted U. S. examination centers as will be required and will establish examination centers abroad in numbers as found required to meet the need.

The National Board of Medical Examiners will proctor the examination, score and analyze the results, and turn them over to the ECFMG's examination committee for final evaluation and action.

What is the Charge to be?

Foreign medical graduates already in this country will be billed for $50 covering the cost of the three-way screening.

Foreign medical graduates abroad will be billed the $50 only if and when they pass the screening, receive a position in an American hospital, or are otherwise earning American dollars.

American hospitals receiving screened candidates will be billed $75 for each such candidate accepted.

What Are the Target Dates for Various Services?

The answering of correspondence began Oct. 5 and has been kept current since that time. The translation, interpretations and evaluation of credentials has already begun.

The target date for the first American Medical Qualification Examination for foreign medical graduates already in this country is set for February or March 1958.

The target date for the second American Medical Qualification Examination for foreign medical graduates both here and abroad is set for July or August 1958.

45 MILLION UNDER 40 STILL HAVE NOT HAD SALK VACCINE

NEW statistics produced by the National Health Survey indicate that 45 million persons under 40 years of age still have not received Salk poliomyelitis vaccine. The new data, based on information obtained in household interviews, also shows the following: 5 million under 40 received one injection, in contrast to earlier estimates of 17 million; 25 million have received two shots, instead of the earlier estimate of 28 million; the number receiving the full three shots has increased from an estimated 28 million to 34 million.

Commenting on the new statistics, the surgeon general says: "It is encouraging to find that the number of persons with maximum protection is greater than had previously been estimated. However, the fact that there are sill an estimated 45 million – 15 million children and 30 million adults under 40 – with no protection is a matter of grave concern. . . . The present supply of vaccine is ample and the manufacturers can produce additional vaccine in pace with the need. Unvaccinated persons who become crippled by paralytic polio in the future will suffer a dual tragedy: that of having a disability and of knowing that, in all probability, it could have been prevented by the simple and painless precaution of vaccination."

Last January, the American Medical Association initiated the nationwide campaign to promote use of Salk vaccine, after a surplus started piling up and manufacturers cut their producion. Subsequently, the surplus was wiped out and scattered shortages appeared. Now, however, supplies are adequate and manufacturers are prepared to step up their future output in line with demand.

THE EYE IN GENERAL PRACTICE
by C. R. S. Jackson, F.R.C.S. 152 pages. Illustrated. (1957) Williams & Wilkins. $5.

The purpose of the volume is threefold: (1) To describe the common diseases of the eye; (2) to show how dangerous diseases of the eye may be recognized; and (3), uniquely, to help general practitioners to grasp the significance of reports submitted by ophthalmologists. The text is lucid and the illustrations, most of them in full color, are lifelike. It could be dedicated to all who want a synopsis of ophthalmology in relation to the body as a whole.

Stacey's Medical Books, San Francisco, California.

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BOARD OF MEDICAL EXAMINERS STATE OF ARIZONA

826 Security Building Phoenix, Arizona

The Board of Medical Examiners of the State of Arizona at a regular meeting held Saturday, Oct. 19, 1957, issued certificates to practice medicine and surgery in this state to the following doctors of medicine:

Brown, Harvey G. (GP), 703 Sheridan Blvd., Denver 14, Colo.

Burgess, Arthur W. (GP), 714 Washington Avenue, Iowa Falls, Iowa

Chappel, Merwin R. (GP), University of Arizona, Tucson, Ariz.

Clifton, Jerry T. (GP), Hayden Hospital, Hayden, Ariz.

Gluck, Martin (I), 3216 East Elida Street, Tucson, Ariz.

Gray, Ellis B. (Oph.), 526 East Dunlap Avenue, Sunnyslope, Ariz.

Harper, William Hale (Pd), St. Joseph's Hospital, Phoenix, Ariz.

Heileman, John P. (GP), NAAS Dispensary, Kingsville, Texas

Hilts, Schuyler V. (I), 2447 East Adams St., Tucson, Ariz.

Imperato, Pasquale J. (Ind), Glen Canyon Dam Project, Page, Ariz.

Jambor, James J. (D), 1826 Eighth Avenue, Yuma, Ariz.

Kaster, Robert B. (Anes), 1710 Andover Dr., Cheyenne, Wyo.

Kores, Vernon (Pd), 6040 West Lisbon Ave., Milwaukee 10, Wis.

Lothman, Theodore L. (GP), Morenci Hospital, Morenci, Ariz.

McLeod, Robert E. (GP3, Maricopa County Hospital, Phoenix, Ariz.

Martin, John A. III (GP), 130 East Stetson Drive, Scottsdale, Ariz.

Moon, John F. (GP), 101 Fourth Street, Baraboo, Wis.

Nelson, William J., Jr. (GP), 450 Twenty-third Street, Yuma, Ariz.

Phalen, Patrick T. (GS), Mayo Clinic, Rochester, Minn.

Pittman, Hal W. (NS), 550 West Thomas Road, Phoenix, Ariz.

Shapiro, Robert C. (P), 1206 West Madison Street, Phoenix, Ariz.

Stephan, Winton E. (I), 301 Seymour, Lansing, Mich.

Thode, Paul G. (Chest Diseases), 1955 College Avenue, Livermore, Calif.

Zuschke, Walter O. C. (S-Gyn-Pr), Good Samaritan Hospital, Phoenix, Ariz.

LOCATION INQUIRIES RECEIVED

BURNETT, ARTHUR D., M.D., 5724 H.M.C. Street, Apartment No. 5, Houston 21, Texas, *GS*, age 36, board eligible. Desires assistantship or associateship with general surgeon. Four years general surgery residency and completing one year fellowship cancer surgery June 1958. Married, two children, Presbyterian, Scotch and English descent. Military status Group IV. Licensed Arizona, California and Kansas.

DOWLEN, JOSEPH A., M.D., 3040 Nevada, Minneapolis 26, Minn., *S*, age 38; 1944 graduate Southwestern Medical College; interned at Denver General Hospital and will complete residency at Minneapolis General Hospital in January 1958. Interested in solo or clinical practice.

EVANS, DAVID J., M.D., 604 Ninth Avenue, Coralville, Iowa City, Iowa, *Oph*, age 31; 1951 graduate Northwestern University; board eligible as of Jan. 1, 1959. Interested in clinical, assistant or associate practice. Available Jan. 1, 1959.

GARDNER, J. H., M.D., 812 E. 12th, Eugene, Ore, *GP*, age 29; 1957 graduate Universary of Iowa; internship at Sacred Heart General Hospital, Eugene, Ore. Interested in industrial, clinical, assistant or associate practice. Available August 1958.

GREGORY, CLYDE C., M.D., 1579 Oxford, Pasadena 7, Calif., *GP*, age 37; 1957 graduate College of Medical Evangelists; presently interning at Los Angeles County General Hospital. Would be interested in clinical, assistant or associate practice. Available August 1958.

JOHNSON, HENRY T., M.D., 1439 E. Michigan Ave., Lansing 12, Mich. Surgeon, general and proctologic. Age 39. Board certified and F.A.C.S. Administrative, writing and teaching experience. Seven years practice. Desires association or industrial position. Will consider some general practice.

NOORDA, ALBERT G., M.D., 191 South 100 East, Cedar City, Utah, *GP;* age 30, married; 1956 graduate of the University of Utah; interned at Salt Lake VA Hospital, Salt Lake City,

Utah. Interested in associate practice. Available in 1958.

SCHILD, JOYCE A., M.D., 4721 Diversey, Chicago, Illinois, *GP*, 1956 graduate University of Illinois; interned at St. Francis Hospital, Peoria. Is seeking a temporary assistant or associate practice until July 1, 1958, when she will begin an EENT residency.

SPIKES, GEORGE A., M.D., Hollettsville, Texas, *I*, age 37; 1951 graduate University of Chicago; has had one year of residency training at VA Hospital, Houston, Texas. Available after July 1958.

STUDT, WARD B. JR., M.D., 301 West 9th Avenue, Truth or Consequences, N. M., *Or*, age 32; 1951 graduate College of Medical Evangelists. Will have completed orthopedic board requirements next July. Will consider clinical, industrial, institutional, assistant or associate practice. Available July 1958.

LOCATION OPPORTUNITIES

ASHFORK – Pop. 700 – North centrally located – Railroad center – Contact the Women's Club, Ashfork, Ariz.

BENSON – Excellent opportunity for GP – This David-Benson trade area has about 5,000 population with only one doctor available. A small sleep-in hospital can be set up very easily. Hospital 25 miles away. Chamber of commerce will furnish telephone answering service, nine to five. Contact Bernard Fisher, D.D.S., medical committee of the chamber of commerce, Benson, Ariz., or James M. Hesser, M.D., 6th and Huachuca Streets, Benson, Ariz.

CAMP VERDE – Located in the heart of a large farming and ranching area on the Verde River. Approximately 100 miles north of Phoenix. Badly in need of a medical doctor. Contact Ivy N. Moser, R.N., Camp Verde, Ariz.

FLAGSTAFF – Pop. 17,500 – Largest city in the north central Arizona trading area. One pediatrician is needed (as there are a number of general practitioners who would gradly refer work to him). Excellent opportunity for an EENT doctor and a general practitioner. Contact C. Herbert Fredell, M.D., secretary, Coconino County Medical Society, 121 East Aspen Avenue, Flagstaff, Ariz.

GILA BEND – Pop. 2,500 – 80 miles west of Phoenix – Nearest town to the Painted Rock Dam Project – Good opportunity for general practitioner. Cattle, cotton and general farming. Office and equipment available. $150 monthly income from board of supervisors. Contact Mrs. J. F. Allison, Box 485, Gila Bend, Ariz.

HOLBROOK – Population above 7,000. Located in the heart of the northeastern pine country of Arizona on U. S. Route 66. Need services of general practitioner. For full details, contact Donald F. DeMarse, M.D., Box 397, Holbrook, Ariz.

MIAMI – Opportunity for GP – Industrial hospital staffed by approximately seven doctors, who care for personnel and families of those who work for the three principal mining companies. This community is served by numerous small mining and ranching interests. Contact Robert V. Horan, M.D., Miami-Inspiration Hospital, Miami, Ariz.

MORENCI – Mining community located near New Mexico-Arizona border – Pop. 10,000 – Has vacancy at hospital for GP. Contact Carl H. Gans, M.D., Morenci Hospital, Morenci, Ariz.

PHOENIX – Good opportunity for associate radiologist in Phoenix area. Contact Ernest Price, M.D., 9112 No. 2nd Street, Phoenix, Ariz. (WI 3-3491).

SAFFORD – In need of GP – Pop. 6,000 – Has ideal year around climate with good schools, park, swimming pool, golf course, Elks club. Private hospital, open staff. Surgical privileges after six months if qualified. Completely equipped office for rent and equipment for sale. Contact M. T. Sandeno, M.D., 803 Seventh Street, Safford, Ariz.

SHOW LOW – Pop. 1,500 – Trading center for some 10,000 people. Summer and winter recreation area, cool climate and beautiful forest country. At present there is no M.D. in Show Low and it wishes to locate a doctor there who would help establish a hospital. The town is anxious to locate a doctor and promises full co-operation. Contact either Mary and Eric Marks, Paint Pony Lodge, Show Low, Ariz., or Donald F. DeMarse, M.D., Box 397, Holbrook, Ariz., or Mr. Mitchell Bushman, Show Low, Ariz.

SPRINGERVILLE – Need for general practitioner (private practice, to be associated with Doctor Browning). Good hospital facilities. Has drawing population of 6,000. Contact Ellis V. Browning, M.D., Box 390, Springerville, Ariz.

ST. JOHNS – Seriously need a doctor of medicine, preferably a general practitioner, to locate in this east central Arizona community. Population is approximately 1,500 with several other small towns in the general area. About 20 miles from New Mexico in the beautiful rim country of Arizona. Contact Donald F. DeMarse, M.D., Box 397, Holbrook, Ariz.

TOLLESON – In need of GP – Serves a trading population of from 12,000 to 15,000. Ten miles west of Phoenix. Elementary and high schools, churches of all denominations. Complete office and equipment for GP available on reasonable term lease or purchase. Contact Mr. Norman Andersen, president, chamber of commerce, 9112 West Van Buren Street, Tolleson, Ariz.

TUCSON – The VA Hospital is in urgent need of an orthopedic surgeon. They prefer someone who is board certified, but would take someone who has had special training, as they have the local men in this field available for consultation service. State license is necessary but not necessarily an Arizona license. Contact S. Netzer, M.D., director, professional service, VA Hospital, Tucson, Ariz.

YOUNGTOWN – Pop. 130 – Located 16 miles from Phoenix and just a few miles from several small towns, each a potential field of practice. Most residents are 60 years of age or older and are in need of medical care. Office space is currently provided at no rental. A medical center is being planned. Interested doctors may contact Mr. Sid Lambert, Box 61, Marionette, Ariz.

For Information On Opportunities in the Field of Industrial Medicine, Contact:

Harold J. Mills, M.D., Phelps Dodge Hospital, Ajo, Ariz.

Carl H. Gans, M.D., Phelps Dodge Hospital, Morenci, Ariz.

Ira E. Harris, M.D., Miami-Inspiration Hospital, Miami, Ariz.

Charles B. Huestis, M.D., Box 928, Hayden, Ariz.

Elvie B. Jolley, M.D., Copper Queen Hospital, Bisbee, Ariz.

H. W. Finke, M.D., Magma Coper Company Hospital, Superior, Ariz.

John Edmonds, M.D., Kennecott Copper Corporation Hospital, Ray, Ariz.

Francis M. Findlay, M.D., San Manuel Hospital, San Manuel, Ariz.

VACANCIES, MEDICAL CONSULTANTS IN SOCIAL SECURITY

THE Bureau of Old-Age and Survivors Insurance, social security administration, has announced vacancies for full-time and part-time medical consultants in its division of disability operations. The division is responsible for making determinations of disability under the disability insurance provisions of the Social Security Act. These positions are available in the headquarters offices in Baltimore, Md.

The full-time positions are under civil service and incumbents will receive all federal civil service benefits such as retirement, life insurance, and vacation and sick leave privileges. The salary range is $10,065 to $11,395 a year depending on the individual's qualifications. The salary in part-time positions is paid on a per diem basis.

The medical consultant position includes the following duties: Consultation with lay adjudicators in determining from evidence submitted the extent of medical disability and degree of loss of physical and mental capacity; determining the need for additional medical evidence; developing medical standards for evaluating disability; liaison with professional medical groups; assisting in staff training programs; and participating in studies and reports on medical aspects of the administration of the disability program. Incumbents may from time to time make visits to state agencies making disabiliy determinations under agreements with the federal government, for consultation with physicians in these agencies. Medical consultants do not perform examinations of disabled applicants. All necessary medical evidence of disability is secured from the applicant's physician or through examinations performed by other physicians.

An article describing in greater detail the basic medical aspects of disability insurance operations under the Social Security Act may be found in the Jan. 15, 1955, issue of the Journal of the American Medical Association, pages 270 and 271. Copies of this article are available on request.

These positions, in Baltimore, Md., afford excellent opportunities for participation in clinical work and study in the city's nationally recognized hospitals.

Physicians interested in either full-time or

part-time positions may write to Dr. Arthur B. Price, Chief Medical Consultant, Division of Disability Operations, 200 West Baltimore Street, Baltimore 1, Md., for further information.

MEDICAL MISSIONARIES

THE board of missions of the Methodist church has announced a need for 20 doctors in its mission fields in 10 countries overseas in 1958.

In issuing a call for 547 missionaries overseas next year, the board, through its office of missionary personnel (150 Fifth Ave., New York 11, N. Y.), is seeking to recruit 10 women and 10 men to serve as medical missionaries. The openings cover a varied range of medical fields, including internal medicine, surgery, general practice, public health, gynecology, pathology and radiology.

The Methodist mission board now has 42 doctors at work in countries of Asia, Africa, North and South America. Forty-three others, both women and men, are in various stages of training as medical missionary candidates. The Methodist church, with about 9.5 million members, has 1,500 missionaries at work in 44 countries.

In 1958, doctors are being sought for work in the Belgian Congo, Mozambique, Southern Rhodesia, Angola, India, Pakistan, Korea, the Philippines, Sarawak (Borneo), and Mexico.

Requirements for medical service under the methodist board of missions are generally the same as for practice in the United States – college, medical school, internship and residency. It is the policy of the board to furnish medical school scholarships to persons accepted as official missionary candidates.

There are certain other requirements which are the same for all missionaries regardless of their vocational field. These include:

Christian experience – The basic essential is a first-hand experience of what Christianity is and does, realization of the need of all men for Jesus Christ and a desire to share one's Christian faith and experience in all areas of life.

Age – 23-35.

Health – Good physical and mental health is necessary since the work is difficult and exacting. A thorough physical examination under the direction of the medical secretary of the board is required. A psychological examination is also given.

Church membership – It is the general policy of the board to appoint as missionaries persons who are members of the Methodist church, though some exceptions are made.

Persons interested in obtaining information about medical missionary service may write: Office of Missionary Personnel, 150 Fifth Ave., New York 11, N. Y.

A detailed list of openings for doctors follows:

Three doctors (women) for hospitals in Liberia, Belgian Congo, Mozambique.

One doctor (man) for general hospital and medical extension work in the Belgian Congo.

One doctor (man) for general practice and surgery in large hospital in Southern Rhodesia.

One doctor (man) for surgery in general hospital in Angola.

Three doctors (women) with specialties such as gynecology or anesthesiology in India.

One public health doctor (woman) for India.

Three surgeons (men) for general hospitals in India.

One specialist in internal medicine (man) in Pakistan.

One specialist (man) in gynecology, ophthalmology, pathology, radiology or anesthesiology in Korea.

One doctor (man) for general practice and surgery in Korea.

One public health doctor (woman) for mobile clinic in the Philippines.

One doctor (woman) for general practice in rural hospital in Sarawak.

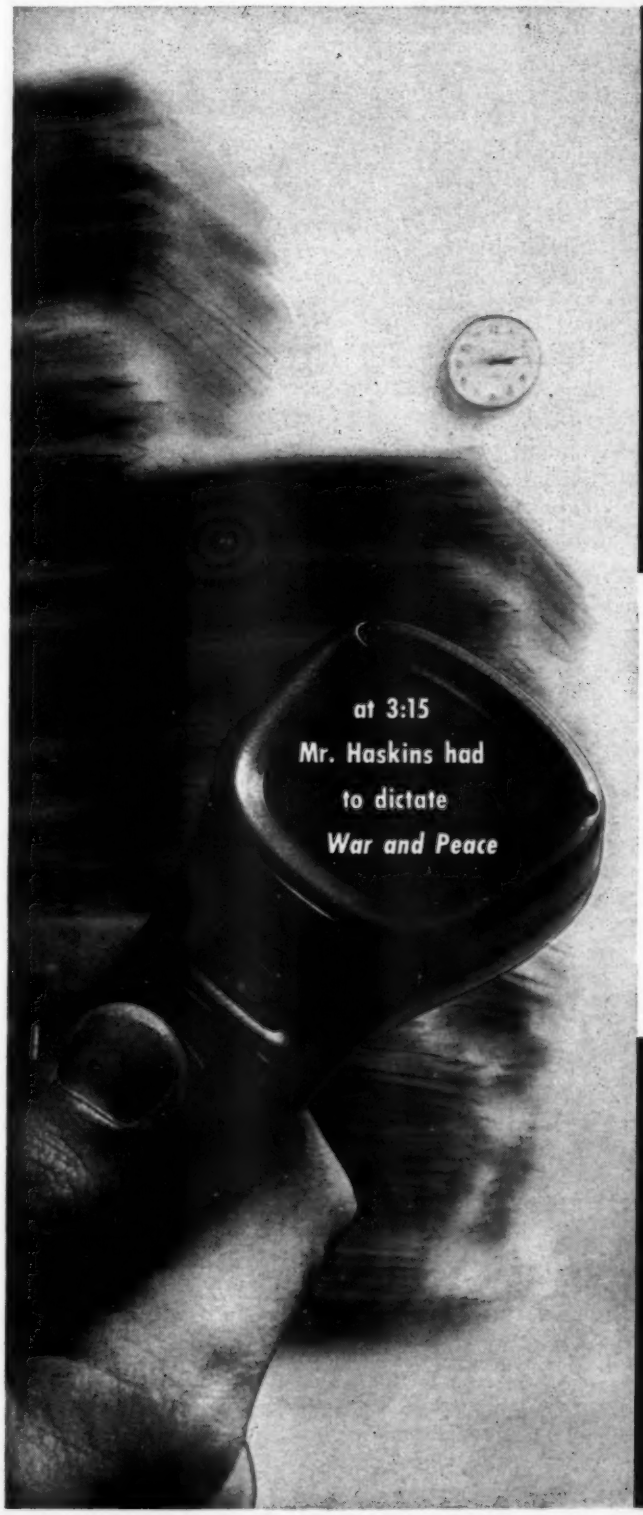
One doctor (man) for new hospital in Sarawak.

One doctor-anesthetist (woman) for hospital in Mexico.

CIVIL DEFENSE STOCKPILES

Location of federal civil defense administration medical stockpiles in the West:

Mira Loma, Calif.
San Jose, Calif.
Yakima, Wash.
Clearfield, Utah
Spokane, Wash.
Stockton, Calif.
Mt. Rainer, Ordnance Depot, Tacoma, Wash.
Sharpe General Depot, Tracy, Calif.



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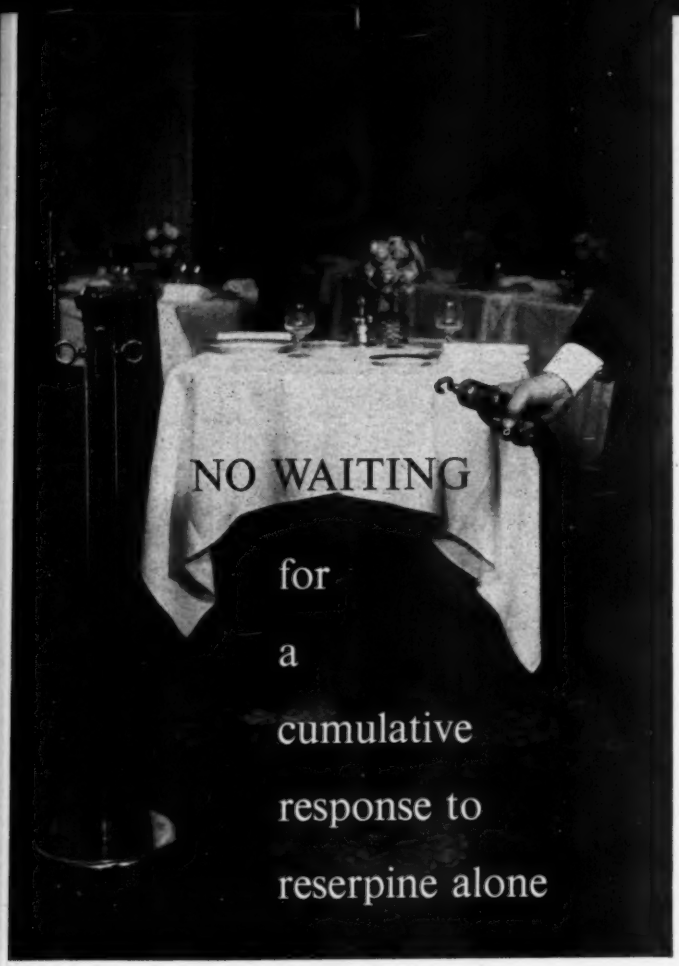
1. Comparative Effects of Various Rauwolfia Alkaloids in Hypertension, submitted for publication.



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Calmer days, more restful nights starting *first* day of treatment, through synergistic action of HARMONYL (Deserpidine, Abbott) and NEMBUTAL (Pentobarbital, Abbott). Lower therapeutic doses, lower incidence of side effects. Each HARMONYL-N Filmtab contains 30 mg. NEMBUTAL Calcium and 0.25 mg. HARMONYL. Each HARMONYL-N *Half-Strength* Filmtab combines 15 mg. NEMBUTAL Calcium and 0.1 mg. HARMONYL. Abbott

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THE MALABSORPTION SYNDROME
by **David Adlersberg**, M.D. 256 pages. Illustrated. (1957) Grune & Stratton. $5.50.

Twenty authors, most of them staff members of Mount Sinai Hospital in New York, discuss the malabsorption syndrome; tropical and nontropical sprue, idiopathic steatorrhea, and celiac disease in the child and adult. The editor is associate attending physician for metabolic diseases, Mount Sinai Hospital, and an assistant clinical professor of medicine, Columbia.

Stacey's Medical Books, San Francisco, California.

GYNECOLOGIC SURGERY AND UROLOGY
by **Thomas L. Ball**, M.D. 547 pages. Illustrated. (1957) Mosby. $20.

This text combines the theory and practice of all standard pelvic surgery, presenting it as regional surgery. All anatomical, pathologic, and technical problems encountered by a gynecologist in the operating room including regional abdominal surgery incidental to gynecology, cardiac arrest, and pediatric gynecologic surgery, are described and illustrated in careful detail. The bibliography is complete.

Stacey's Medical Books, San Francisco, California.

STUDIES OF HYSTERIA
by **Josef Breuer** and **Sigmund Freud**, M.D. 335 pages. (1957) Basic Books. $5.50.

The cornerstone study on which all psychoanalytic theory is based has been translated many times. With new material and fresh modern wording, this is still a basic book for all students, the current definitive edition.

Stacey's Medical Books, San Francisco, California.

THE STORY OF PEPTIC ULCER
by **Richard D. Tonkin**, M.D. 71 pages. Illustrated. (1957) Saunders. $2.25.

An imaginative, educational, and delightfully amusing presentation discusses the whys, wherefores, and management of peptic ulcers. It is intended for the layman, magnificently supplementing the educational efforts of physicians. Much of the booklet's distinction is due to the excellent illustrations of Raymond K. Hellier.

Stacey's Medical Books, San Francisco, California.

MANAGEMENT OF THE PATIENT WITH HEADACHE
by **Perry S. MacNeal**, M.D., et al., 145 pages. (1957) Lea & Febiger. $3.50.

A well integrated triumvirate of internist, neurologist, and psychiatrist, work together on a sensible and contemporary clinical topic. The result is a readable, helpful, and inexpensive guidebook. Headaches appear under these headings: local intracranial lesions, tensions, psychogenic, vascular, and extracranial. This is for anybody, anywhere.

Stacey's Medical Books, San Francisco, California.

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Future Meetings

AMERICAN CANCER SOCIETY SEMINAR

Jan. 23 through 25, 1958
Tucson, Ariz.

ACADEMY OF GENERAL PRACTICE MEETS NEXT MARCH IN DALLAS

THE American Academy of General Practice 10th annual scientific assembly will give more than 8,000 family doctors, residents, interns and guests an opportunity to hear 35 medical experts discuss subjects ranging from teenage to old-age problems, and from heart disease and ulcers to eye ailments, fractures and the hypnotized patient. The four-day assembly opens March 24 in the new Dallas Memorial Auditorium.

More than 90 scientific and 300 technical exhibits will supplement the scientific lecture program.

1958 MLA MEETING

THE 57th annual meeting of the Medical Library Association will be held in Rochester, Minn. from June 2 through June 6, 1958 with headquarters at the Hotel Kahler. The theme of the Rochester meeting will be "Advances in Medical Library Practice." Mr. Thomas E. Keys, librarian of the Mayo Clinic, is convention chairman and letters of inquiry should be addressed to him.

A pre-convention activity is being planned for Saturday, May 31. A series of refresher courses embracing many fields of medical library work will be given. Classes will be made up from the following subjects: Administration, Acquisitions, Classification, Cataloging, Non-book materials, Photoduplication, Public Relations, Reference Work, Rare Books, History of Medicine, Bibliographic Services, Periodicals, Binding, Library Architecture, Equipment, and Medical Terminology.

POSTGRADUATE COURSE ON DISEASE OF THE CHEST

WE are pleased to announce that the Council on Postgraduate Medical Education of the American College of Chest Physicians will sponsor the 11th Annual Postgraduate Course on Diseases of the Chest at the Warwick Hotel, Philadelphia, March 3-7, 1958.

The most recent advances in the diagnosis and treatment of chest diseases – medical and surgical – will be presented. The tuition fee is $75, including round table luncheons.

Further information may be obtained by writing to the Executive Director, American College of Chest Physicians, 112 East Chestnut Street, Chicago 11, Ill.

ARIZONA HEART ASSOCIATION ANNUAL CARDIAC MEDICAL SYMPOSIUM

Phoenix, Arizona
January 31 - February 1, 1958
Valleyho Hotel Scottsdale, Arizona

Friday, January 31, 1958

9:00-10:00–Factors in the Onset of Coronary Occlusion with Special Reference to the Roles of Effort and Occupation – Arthur M. Master, M.D.
10:00-11:00–The Vector Approach to Electrocardiography – Pt. 1 – Robt. P. Grant, M.D.
11:00-11:10–Intermission
11:10-11:45–The Vector Approach to Electrocardiography – Pt. II – Robert P. Grant, M.D.
11:45- 1:00–Recent Advances in Cardiac Surgery – Charles P. Bailey, M.D.
1:00- 2:00–Lunch
2:30- 3:30–Occlusion and Aneurysm of the Abdominal Aorta and Arteries of the lower Extremities – Edgar V. Allen, M.D.
3:30- 4:30–Rheumatic Heart Disease and Present Status of the Two Step Exercise Test – Panel Discussion.

Saturday, February 1, 1958

9:00-10:00–Fundamental Aspects of Cardiac Hypertrophy and Dilatation – Robert P. Grant, M.D.
10:00-11:00–Aortic Valve Surgery – Charles P. Bailey, M.D.
11:30-12:30–Treatment of Hypertension – Edgar V. Allen, M.D.
12:30- 2:00–Lunch
2:00- 3:00–Premonitory Phase of Acute Coronary Occlusion – Arthur M. Master, M.D.
3:00- 3:15–Intermission
3:15- 4:30–Coronary Heart Disease and Rehabilitation following Coronary Occlusion Panel Discussion.

Phoenix Clinical Club

The Case History in this discussion is selected from the Case Records of the Massachusetts General Hospital, and reprinted from the New England Journal of Medicine. The discussant under Differential Diagnosis is a member of the staff of the Massachusetts General Hospital. The other discussants are members of the Phoenix Clinical Club.

MASSACHUSETTS GENERAL HOSPITAL

PRESENTATION OF CASE
CASE NO. 14

A 50-YEAR-OLD married woman was admitted to the hospital because of abdominal swelling.

Two months before admission, the patient noted the onset of swelling of the abdomen associated with some nausea, but no vomiting. For two weeks before entry she had experienced pain in the left lower quadrant of the abdomen and pain and a bearing-down sensation in the pelvis.

The patient had a history of "bronchitis" for many years and had been hospitalized several times because of pneumonia. Six years before admission, she was found to have rheumatic heart disease with mitral stenosis and two years later was hospitalized because of congestive heart failure. She had also had an episode suggestive of pulmonary infarction for which bilateral saphenous-vein ligations were done three years before admission. She had been followed in the Rheumatic Fever Clinic and treated with digitalis and a low-salt diet. On this regimen there had been no signs of congestive heart failure for four years.

Physical examination showed a well-developed and well-nourished woman who was able to lie flat in bed with only a slight increase in respiratory rate. The neck veins were visible when the patient sat up but were not distended. The chest was clear to percussion; there were moist, crackling rales at both lung bases posteriorly. The heart was enlarged, the border of dullness extending to the anterior axillary line. There was a slow auricular fibrillation. There was an accentuated snapping mitral first sound, with a Grade 2 mitral diastolic rumble. The pulmonic second sound was greater than the aortic. The abdomen was tense with four plus ascites. No organs or masses were palpable. There was no ankle edema.

The temperature was 98.6° F., the pulse 80, and the respirations 20. The blood pressure was 120 systolic, 70 diastolic.

The urine had a specific gravity of 1.008 and was negative for albumin and sugar; the sediment contained a few white cells per high-power field. Examination of the blood showed a hemoglobin of 12.5 gm. and a white-cell count of 6,900, with 76 per cent neutrophils, 20 per cent lymphocytes and 4 per cent monocytes. The nonprotein nitrogen was 24 mg., the total protein 6.93 gm., the albumin 3.49 gm., and the globulin 3.44 gm. per 100 cc. The prothrombin time was 13 seconds (normal, 13 seconds). A bromsulfalein test demonstrated 8 per cent retention of the dye, and a cephalin flocculation was two plus in 24 and three plus in 48 hours. A roentgenogram of the chest revealed the same findings noted about one year before entry. There was some blunting of both costophrenic angles and multiple densities in both lungs thought to be on the basis of hemosiderosis. The heart was enlarged.

During a diagnostic paracentesis 150 cc. of clear, dark-yellow fluid was removed. This had a specific gravity of 1.021 and contained 1,200 red cells and 200 white cells per cubic millimeter, with 70 per cent lymphocytes and 30 per cent neutrophils. The total protein was 5.4 gm. per 100 cc. Cultures and smears for bacteria, including tubercle bacilli, were negative. On cytologic examination no malignant cells were found. Skin tests with old tuberculin, 1:100,000 and 1:10,000 dilution were negative. Two days later 3,000 cc. of murky-brown fluid was removed from the abdomen, examination of which revealed similar findings as before except that the differential white-cell count was 60 per cent neutrophils and 40 per cent lymphocytes. On physical examination at this time the abdomen was soft, without tenderness or masses. On pelvic examination an extremely tender, firm, but boggy mass, which moved with the uterus, was palpable in the posterior cul-de-sac. Peritoneoscopy was performed nine days later, when 2,000 cc. of cloudy, yellow fluid was

aspirated. The pelvic peritoneum had a slough-like appearance, with multiple yellowish lesions. The left tube was markedly inflamed and covered with yellowish slough. Just below it lay a firm, gray, semisolid, cystic mass, which was rounded and smooth surfaced and measured about 10 cm. in diameter. Other yellowish lesions were noted on the peritoneum as high up as the liver. A biopsy of one of the lesions was later reported by the pathologist as "purulent exudate." A plain film of the abdomen, a gastrointestinal series and a barium enema examination were all negative.

While in the hospital, the patient continued to be nauseated but did not vomit. From the fifth hospital day on she had a fever, with daily temperature elevations to 101° F. associated with a leukocytosis, the white-cell count ranging from 12,000 to 15,000.

About a month after admission, an operation was performed.

R. LEE FOSTER, M.D.:

Without going over this patient's history in detail, let us say that we are here dealing with a 50-year-old married woman whose chief complaint, and the cause of her hospitalization, was abdominal swelling which later on was proved to be due to ascites. This was of two months' duration and was associated with some nausea but no vomiting. Two weeks before her hospitalization, something happened to cause pain in the left lower quadrant of the abdomen and some pain and bearing-down sensation in the pelvis. We are not told if that pain has persisted. She has an interesting past history which, although it contains many elements that are confusing, I think may contain the clue which will help us arrive at the diagnosis if we can only find it. This past history will be dealt with as we need it in our differential diagnosis.

Although this patient has a number of physical findings which are significant, the one finding which we know the most about and which we are perfectly sure of is the ascites. Since this is also the presenting symptom, it would seem logical to start there and the problem then resolves itself into the consideration of the causes of ascites with an attempt to fit in one of these causes with the past history and the other physical findings.

The main causes for ascites, as I see it, can be divided into three broad groups. First, those conditions causing an obstruction to lymph or blood flow. Second, malignancy. And third, inflammatory disease of the peritoneum or adjacent structures.

Considering the first of these broad causes, obstruction to lymph or blood flow, the ascites may be due to several mechanisms. There may be obstruction to the arterial flow, such as a thrombus of a mesenteric artery causing an ischemia of the mesentery and gut in the area affected with resultant tissue damage and eventual release of fluid into the peritoneal cavity. This usually presents a very acute and painful picture with rapid progression into necrosis of the bowel affected, with a more rapid and malignant course than this patient experienced. There may be obstruction to the venous circulation such as a thrombosis of the portal veins, or a thrombosis of some of the mesenteric veins, or a thrombosis of the inferior vena cava above the entrance of the hepatic veins. There may be obstruction to the circulation through the liver from a cirrhosis. This patient with her history of an episode sometime previously of what was thought to be pulmonary infarction with bilateral saphenous vein ligations is a candidate for such a condition. Obstruction to the lymphatic drainage of the mesenteric structures would act similarly to obstruction of lymphatic drainage elsewhere, with production of edema of the bowel affected. These conditions, however, do not explain a number of the things seen at peritoneoscopy, as for example the mass in the left adnexal region; and the findings at peritoneoscopy in my opinion were not very suggestive of this type of pathology. I am ruling out then this broad classification of vascular occlusion in spite of this patient's past history of possible pulmonary infarction, saphenous vein ligation, and a rheumatic heart disease with fibrillation.

Malignancy is the next major cause to be considered. Malignancy as a cause of ascites can conveivably be primary in the peritoneum, although this is very rare. For a secondary infiltration of the peritoneum and the adjacent structures, one must presume the existence of and search for a primary source. We have in this patient's history and other findings no really good leads for a primary source. The pelvic mass would be the most likely suspect, but if such a mass were malignant and had progressed to the extent of causing peritoneal implants such as seen at the peritoneoscopy, surely some sus-

picious cells or actual tumor cells would have been found in the ascitic fluid, and the ascitic fluid would have more than likely been more bloody. An actual biopsy and presumably a satisfactory biopsy of one of the peritoneal implants was reported only as "purulent exudate" and with no mention of any suspicion of tumor cells. The only other hint as to a possible primary source, which is the history of bronchitis and presumably a cough for many years, together with the nodular shadows as seen on x-ray, I do not consider as of much weight in the possible diagnosis of a malignancy. I believe a bronchogenic carcinoma of that long duration would have acted differently, and besides, the pulmonary shadows do not sound at all characteristic. They could be explainable, I believe, on the basis of chronic pulmonary congestion associated with the heart failure this patient has had.

This brings us to our last major cause for ascites. This is the inflammatory disease or peritonitis. I think it is rather evident that this patient did have a peritonitis confirmed by the peritoneoscopy, and in our effort to determine what type of peritonitis the patient had, several classes can be considered. The first of these is a chemical peritonitis usually an aseptic peritonitis caused by contact with some irritating chemical, introduced through violence to the abdomen and resulting either in the introduction of foreign material or, usually, in the spillage of bile, urine, blood, gastric contents, etc. We really do not have any history to suggest such a spillage, and the only indication that such might have occurred is the presence of one cystic mass in the pelvis, and the assumption being that another may have existed and ruptured into the peritoneum. Actually it is conceivable that the patient may have had a cyst of the left ovary with torsion of the pedicle and rupture causing the chemical peritonitis. The yellowish slough on the markedly inflammed left tube might be the site of the rupture. Points against this are the onset of abdominal swelling for six weeks before she experienced pain in her left lower quadrant, and also this pain I believe would have been more severe and disabling had it seen due to a rupture of a cyst at that time.

Septic peritonitis must now be taken into account and can be considered as of two types. The primary type is thought to arise from sources outside of the abdomen. It is comparatively rare, is usually found in younger people, and the common organisms responsible are the pneumococcus, the hemolytic streptococcus, and the tubercle bacillus. A peritonitis of this sort is not a mixed infection, but is due to a single organism only. The secondary type of septic peritonitis is caused by invasion of the peritoneal sac by organisms from adjacent structures. Sources are the intestinal tract, genito-urinary tract, liver, pancreas, and other viscera. These are usually mixed infections, usually have a very acute and septic course, and provide a thick and purulent ascitic fluid from which the organisms can usually be cultured or even found by smear. If we are going to consider septic peritonitis seriously, and I think we should, the lack of organisms in the ascitic fluid and the predominance of lymphocytes rather than neutrophils in the clear ascitic fluid, I think rules out most of the possibilities. The outstanding possibility which in my opinion cannot be ruled out is a tuberculous peritonitis. A negative tuberculin test favors the diagnosis rather than hinders it in my opinion, since this test frequently goes negative in an acute flare-up of tuberculous infection. Failure to grow tubercle bacilli from the ascitic fluid is distressing, but not discouraging so far as our diagnosis is concerned. The type of ascitic fluid, the specific gravity, and the cellular content are all compatible with this diagnosis. Without taking the time to enumerate all of the confirmatory evidence, but resting largely on the exclusions already made, I submit it as my first diagnosis. I believe there is a tuberculous salpingitis on the left also. One condition which cannot be ruled out and is considered as likely with the history, is a rheumatic peritonitis, but never having seen one of these or had any experience with it, I hesitate to make such a diagnosis.

My diagnosis then is, No. 1 fibroma of the left ovary. No. 2, an ovarian cyst with torsion of the pedicle and rupture with resultant aseptic peritonitis and a remaining para-ovarian cyst.

DIFFERENTIAL DIAGNOSIS

DR. JACOB LERMAN: From the history we learn that the patient had rheumatic heart disease with mitral stenosis and auricular fibrillation, and one episode of congestive heart failure. The presence of ascites in such a patient could be due to several conditions, the most important ones being cardiac cirrhosis or mesenteric thrombosis after an embolus. Against the former is

the absence of congestive heart failure before and during admission; against the latter is the absence of paralytic ileus and the fact that the patient was not too sick.

Laboratory data revealed slight liver damage as indicated by an abnormal albumin-globulin ratio and a + + + cephalin flocculation in 48 hours. The fluid in the abdomen was a clear exudate that subsequently became murky brown, probably as a result of bleeding after the first tap. The change from 30 to 60 per cent neutrophils in the abdominal fluid is consistent with the presence of blood in the peritoneal cavity. The negative tuberculin tests argue against a diagnosis of tuberculosis peritonitis.

In general, I must try to evaluate the presence of a tender mass in the posterior cul-de-sac, an exudate in the peritoneal cavity, evidence of pelvic inflammation and yellowish lesions involving the peritoneum. At this point let us see the x-ray films.

DR. JOHN F. GIBBONS: A series of chest roentgenograms has been selected. In the first, made nearly five years before admission, the pulmonary segment of the cardiac shadow is accentuated, but there is no evidence of cardiac enlargement otherwise. The lung fields show diffuse exaggeration of the vascular shadows and multiple diffuse punctate densities, which are thought to be hemosiderin deposits in the lungs. Both costophrenic sulci are blunted, presumably by thickened pleura. Subsequent films made about a year and a half before and at the time of admission, revealed a progressive decrease in the pulmonary vascular engorgement, but the stippling in the lung fields remains. The configuration of the heart is not detectably altered. These findings suggest disease of the mitral valves with hemosiderosis in a patient who had episodes of cardiac decompensation.

DR. LERMAN: Then from an x-ray point of view, the degree of congestive heart failure had diminished.

DR. GIBBONS: That is correct. A film of the abdomen made shortly after admission shows a diffuse haze that is probably due to ascites.

DR. LERMAN: Are the liver and spleen enlarged?

DR. GIBBONS: No.

DR. LERMAN: Obviously, the diagnosis is not simple. I shall discuss it under the headings of infection, tumors and miscellaneous conditions. The most likely sources of infection, on a statistical basis, are the tubes and ovaries, or both. Chronic pelvic inflammation and acute exacerbation and rupture of a tube, or leakage of pus from a tube into the posterior cul-de-sac, could account for the major portion of the clinical findings. This diagnosis is also consistent with the findings at peritoneoscopy and by biopsy. However, negative cultures and smears throw some doubt on this diagnosis. The description of "yellowish lesions" involving the peritoneum as high up as the liver is also unusual in this condition.

Is this tuberculosis peritonitis? The history and the physical examination are consistent with this diagnosis, but the negative smears and cultures and the negative tuberculin tests tend to rule this out. Other infections, such as actinomycosis, are a possibility, but the data are not sufficient to settle this point. Echinococcus cyst is a remote possibility, and the rupture of a cyst may produce ascites. However, the evidence for such a diagnosis is not available.

One should consider infections arising in an organ other than the pelvic organs. I have already mentioned peritoneal irritation associated with mesenteric thrombosis. A ruptured gall bladder may cause pus to accumulate in the posterior cul-de-sac, but the patient would undoubtedly have been much sicker and would have had paralytic ileus. Pancreatitis, particularly a subacute variety, would be more consistent with the clinical findings such as the ascites, the yellowish lesions and the mass in the pelvis. Certainly, the patient was not sick enough for an acute pancreatitis, and there was no history of a sudden onset. These findings are consistent only with a slowly developing, progressive pancreatitis.

In the category of tumors, one must consider both the benign and malignant varieties. An ovarian fibroma is frequently associated with ascites. One variety of this is the Meigs-Cass syndrome, in which the ovarian fibroma is associated with pleural effusion as well as ascites. The fluid in this case is usually a transudate. Moreover, this diagnosis does not account for the other findings in the peritoneal cavity, or for the stormy reaction during the hospital stay. Objections can also be raised against the diagnosis of malignant tumors of the ovary, some of which are associated with ascites. The absence of malignant cells in the fluid also argues against this diagnosis. Of the various malignant ovarian tu-

mors, pseudomucinous cystadenoma could simulate the clinical picture most closely. However, the character of the fluid is different and the biopsy of the peritoneal lesions is against such a diagnosis. A Krukenberg tumor from the gastrointestinal tract or abdominal lymphoma, both of which may be associated with ascites, should be considered, but the evidence is against these diagnoses as it is against the other tumors.

In summary it seems that the diagnosis is either pelvic inflammation or subacute pancreatitis—I cannot be sure which is the more likely. It is conceivable that the infection originated in another organ, but I cannot find the evidence.

DR. EDWARD B. BENEDICT: My impression from the peritoneoscopy was that the gross findings were not typical. My first choice was tuberculous peritonitis, and my second, carcinoma. When the pathology report of "purulent exudate" came back, I believed that both tuberculosis and carcinoma were probably excluded because in those diseases the accuracy of peritoneoscopic biopsy is high. I therefore strongly urged laparotomy.

DR. WINFIELD S. MORGAN: Dr. Shaw, will you give us the clinical impression on the ward, and describe your operative findings?

DR. ROBERT S. SHAW: On the surgical service, it was thought that this patient with a peritoneal exudate and a pelvic mass had a carcinoma of the ovary.

CLINICAL DIAGNOSIS:

Carcinoma of ovary.

DR. JACOB LERMAN'S DIAGNOSIS:

?Pelvic inflammation.

?Subacute pancreatitis.

Rheumatic heart disease, with mitral stenosis and auricular fibrillation.

ANATOMICAL DIAGNOSIS:

Fibroma of ovary.

PATHOLOGICAL DISCUSSION:

DR. SHAW: At laparotomy there was a minimal inflammatory reaction in the pelvic peritoneum entirely consistent with previous paracentesis. None of the tubercle-like peritoneal lesions described at the peritoneoscopy were seen. The right ovary was found to lie in the cul-de-sac, to be firm and pale and to be enlarged to a diameter of approximately 10 cm., presenting the characteristic picture of an ovarian fibroma. The left tube and ovary appeared normal. The evacuation of approximately 3 liters of ascitic fluid and a bilateral salpingo-oophorectomy were performed. The uterus was small and atrophic. There were numerous old adhesions of small bowel in the pelvis, but exploration of the remainder of the abdominal cavity was entirely negative.

DR. MORGAN: The specimen received in the laboratory was a large, roughly ovoid mass measuring 12 by 7 by 5 cm. and weighing 310 gm. This apparently had replaced the right ovary. The surface was smooth, glistening and tan gray; on section it was firm and yellow gray, with mottled areas of necrosis. Microscopically, multiple sections of the mass showed a similar picture of dense, interlacing bands of cellular fibrous tissue and collagen. The cells were ovoid or spindle shaped. The picture was typical of a fibroma.

It is well known that fibromas of the ovary may be associated with ascites and in still other cases with ascites and hydrothorax, the latter being examples of the Meigs-Cass sydrome. It is thought that the peritoneal fluid results not from peritoneal irritation by the tumor, but by a transudation of fluid from the tumor itself. In cases of Meigs-Cass syndrome, the pleural fluid is apparently derived from the ascitic fluid by transmission through diaphragmatic lymph channels.

DR. SHAW: The ascites did not reaccumulate after operation, and except for mild menopausal sypmtoms, the patient had been doing quite well when seen on a follow-up visit four months after the operation.

HANDBOOK OF TOXICOLOGY: Vol. 2: Antibiotics
by **Williams S. Spector.** 264 pages. 8½ x 11, paper. (1957) Saunders. $6.

If you are interested in chartreusin, hirsutic acids, phagolessin, thermoviridin, or points west, try this one on for size. Everyone from the air force to the National Academy of Sciences got into this act, a listing of several hundreds of antibiotics, together with some properties. The task was tremendous and there is some slight value as a dictionary, but the penicillins get little over a page and most of the stuff will be well forgotten very soon. Except for commercial urges for a new and exclusive antibiotic, the values are problematic.

Stacey's Medical Books, San Francisco, California.

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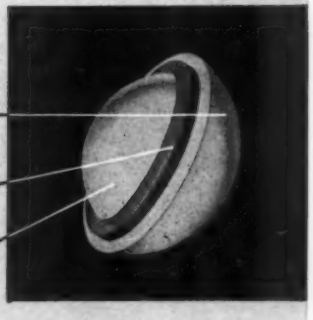

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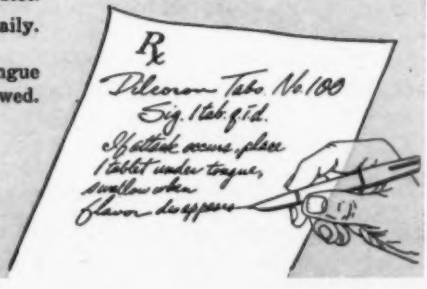

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COLLEGIATE SCHOOL OF NURSING

NURSING EDUCATION in Arizona has taken a giant forward step. The labors and dreams of many lay and professional people came to life with the establishment in September 1957, of not just one, but two schools of nursing on the collegiate level. One is located at the University of Arizona and the other at Arizona State College at Tempe. These four-year basic degree programs lead to a Bachelor of Science in nursing. Their graduate nurse programs enable the diploma graduate registered nurse to obtain her degree in about 2 to 2½ years, depending upon how many of her credits are transferable.

The hospital facility being used by the university is Tucson Medical Center, with the students under the supervision of the university instructors. Mrs. Pearl Parvin Coulter, who was professor and director of public health nursing at the University of Colorado from 1947 until her appointment here, is the director of the school. There are 42 basic students enrolled and 20 graduate students working for their degrees.

The State College at Tempe's hospital facilities include laboratories and classrooms at Good Samaritan Hospital in Phoenix. The director of nursing at Good Samaritan Hospital School of Nursing has taken over the directorship of the Tempe program. She is Mrs. Loretta Hanner, formerly Loretta Anderson. Their enrollment is 45 basic students and about 50 graduates.

Both schools of nursing are integrated collegiate programs in the college of liberal arts. The biological and social sciences are taught on the campus, and principles and practices of nursing are perfected in the affiliated hospitals.

The purposes of the collegiate programs are: To provide educational opportunities for those who have chosen nursing as their profession; to promote the highest professional attainments in nursing by combining academic with technical preparation; to prepare the future nurse for the greater responsibilities which are being entrusted to her as a result of the scientific and technological advances in medicine; and, to help supply the critical need for nurses in Arizona and the nation.

The trend in nursing education is one of transition from the simple healing arts to scientific and administrative know-how. This has evolved from the gradations of responsibility. Nursing, like engineering, medicine, or teaching, now encompasses a wide range of skills, since 67 per cent of the professional nurses work with people who are ill. For the most part, their work is carried out in situations such as the hospital and the doctor's office, where supervision is available and is expected. Some 20 per cent are head nurses, public health nurses and industrial nurses who function with a greater degree of independence and who also may direct other nursing workers. There are 13 per cent in leadership positions as supervisors and administrators in nursing service, in public health, and in hospitals, and as faculty in schools of nursing. This points toward patterning nursing education along the lines of responsibilities for which they need to be prepared. Today there is emphasis upon the need of the nurse for a broad educational foundation that will contribute to her understanding of patients. This, then, points out that there is a definite need for gradations in nursing education with both degree and diploma courses.

Another acute need soon to be faced by nursing educators is discussed in "Nursing Students for the Future," published by the National League for Nursing. In 1956, nursing schools were operating at 90 per cent of capacity with an enrollment of 45,536. On the basis of nurse enrollment trends in past years, projected estimates expect an increase to approximately 59,000 new students in 1960 and 75,000 in 1970. In addition to the problems of increased physical facilities, classrooms, housing, schools, this article says, "Nursing schools are already short of trained teachers. In addition to teachers for basic nursing students, teachers are needed for practical nursing schools; to teach teachers, administrators, and supervisors of nursing service; for in-service education in nursing. This demand for teachers in nursing, growing in urgency, heightens incentive for expanding enrollments in basic college nursing programs as initial training for future teachers."

Arizona has long been a have-not state in providing nurses far below the level of need. We are progressing, but the success of all our schools, both collegiate and diploma, needs and deserves the best support that we can offer.

MRS. ARTHUR DUDLEY